Perspectives in Curriculum Development

HISTORICAL DEVELOPMENT OF CURRICULUM

Editor

S.R. Vashist

The success of a curriculum programme depends ultimately upon the ability of teachers to use in their planning the materials developed in the type of instructional organisation suggested. If materials and the suggested plan of organisation become a part of teachers' plans and become a means of enriching pupil experience, the curriculum actually is improved. Consequently, the development of materials and suggestions for organising instruction, whatever they may by, should be projected with constant reference to the way teachers can employ the suggestions in planning their day-by-day instruction.

This book deals with the development of curriculum in a historical perspective.

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of
Curriculum

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Contents

PREFACE v
1. Introduction 1
2. Primitive Curriculum Practices 3
3. Greek Secondary School Curricula 29
4. Roman and Medieval Curriculum Practices 49
5. Curricula of Early Modern Times 83
6. Modern Secondary School Curricula 117
7. Criticism of Secondary School Curriculum in Ancient, Medieval and Modern Times 175
8. Criticism of Secondary School Curricula in Later Modern Times 213
9. Curriculum Problems Raised by Constructive Criticism 237
10. The Objectives of Modern Secondary Education 291
11. Objectives and Curricula 339
12. Evaluating the Outcomes of Instruction 379
13. Organising Instruction 395

1

Introduction

The concept of curriculum is very old. This is true that the nomenclature is a recent one. For more than fifty years special effort has been made to produce a curriculum for secondary schools that would make a complete life, a vivid realization for the students of our modern secondary schools. For practically a decade a concerted effort has been directed toward the creation and perfection of a scientific basis for curriculum construction.

Such terms as utilitarian values, job analysis, frequency of appearance in daily life, and the project-method are familiar terms in describing means of curriculum construction.

If the modern school curriculum is to be defined as a plan of activities offered by the school for the students of that particular school, and if, at the same time, such curriculum is to be a guide for the teacher as the directing agency in the presentation of these activities, such a curriculum must be founded and maintained on the basis of a combination of all the existing methods that have originated and sprung from the fount of educational philosophy of all times. Also, for the complete functioning of this curriculum more thought must be given to the administration of such a curriculum.

In this volume, the development of curriculum has been traced in a historical perspective.

2

Primitive Curriculum Practices

When curriculum development is considered a means which the school should employ to discharge more effectively its fundamental social responsibilities, a different source of orientation is required than has generally been made the basis for changes in the curriculum. Influences apart from these responsibilities have been potent sources of curriculum change, or lack of change in the past. Development of an educational program which contributes more significantly to directing and achieving social advancement will require full recognition of the force of these influences and the ways in which they operate. In many cases they act in opposition to development of a curriculum which makes such a contribution. Consequently, consideration is given in this chapter to four especially important influences that have conditioned and continued to condition development of the curriculum. They are :

1. the influence of logically organized subject matter,
2. the influence of the textbook,
3. the influence of organized minority groups, and
4. the influence of quantitative standards.

INFLUENCE OF LOGICALLY ORGANIZED SUBJECT MATTER

However far we may have advanced in stating a philosophy of education which takes into account social needs and change, both courses of study and classroom practices still reflect the dominant position of logically organized subject matter. Logical relationship of subject matter even now determines largely the character and scope of the work of the schools. It conditions the method of stating objectives, and the manner in which they are supposed to function.

It determines the basis for organizing instruction and the means of evaluating the results. It lends itself readily to the scientific method in education and the traditional assumption that knowledge of organized bodies of subject matter, properly selected and faithfully acquired, will achieve the desired personal and social ends. This has resulted in the division and subdivision of the broad fields or areas of logically organized knowledge into smaller and smaller units, each allocated to its carefully scheduled place in the respectable family of knowledge. Thus is engendered a kind of specialization in the various subjects that is common in the secondary school and reaches even into the elementary grades.

"Minimum essentials" are stated in terms of subject matter that the individual must know if he is to be educated. Other desirable educational values, usually stated as attitude and appreciations, are considered concomitants of the learning process and are subordinated to the facts, principles, and skills which represent the organization of subjects. Evaluations of the results of instruction, whether by means of the occasional or periodic tests administered during the school term, or the longer "comprehensive" or "final" examinations at the end of the semester or term, are tests primarily of the memory of facts and mastery of skills considered essential in the subject.

Efforts to reduce the domination of logically organized subject matter have taken form in the development of fusion courses in the social studies, in organizing courses around specific objectives, in organizing activity curricula, and in basing courses of study on the unit organization.

When the schools of the nation are considered as a whole, however, it is apparent that these developments have not made much headway. For example, Harap and Bayne analyzed 317 courses of study from seventy-two school organizations for the period 1929 – 31. With regard to fusion courses in the social studies they found that separate courses in history and geography outnumbered social studies courses. They further found that courses of study labeled social studies, in the majority of cases, were not fusion courses in history and geography. These findings are supported by a study by Lindahl, who examined fifty-seven courses of study in history for grades four, five, and six, for the period 1928-31. He concludes that in actual practice the fusion of history and geography does not exist to any appreciable extent. Only 7 per cent of the fifty-seven courses examined were fusion courses.

Although many courses of study have been organised in terms of specific objectives, there is little evidence that the domination of the curriculum by the logical relationships of subject matter has been lessened thereby. A conclusion by Beauchamp, who examined 160 courses of study in science, appears to present the condition very fairly.

> Some of the methods of stating the objectives are "to comprehend," "to understand," "to become familiar with," . . . . If the infinitives are written on one side of the page and the subject matter on the other, we have on one side a series of infinitives and on the other a topical outline. It may be taken for granted that the teacher wishes pupils to obtain a knowledge of the topics in an outline and it is, therefore, questionable whether the addition of the infinitives is any contribution.

Harap and Bayne gave consideration to the number of activity curricula developed. Out of the 317 courses of study which they examined, only seventeen were found which could be classified as activity curricula ; and only ten of these were integrated. Except in three cases the activity curricula were limited to the primary grades.

These authors gave consideration as well to the organization of courses of study in units. They found that this organization did not imply any radical change from logical relationships in the organization of subject matter. They state in this regard :

> In our analysis, we took the view that a unit was a clearly defined subdivision of a course which had unity or completeness, although its unity may have been based upon any of the following factors : a child or adult experience, a center of interest, a theme, a principle, a topic, or a graded step. From this viewpoint, 78 per cent of the courses were subdivided into units of work. Of these courses of study, 80 per cent of the units were based on graded steps or processes such as *percentage* (arithmetic), *machines* (physics), *circulatory system* (health), the *halogens* (chemistry), etc. This does not represent a radical change in organization or treatment of formal courses . . . .

Beauchamp finds the same to be true of the 160 courses in science which he examined. He states that, "An analysis of the courses divided into units indicates that the term 'unit' has been taken over as a convenient term to replace the word 'topic,' rather than as a principle of organization."

Thus, it appears that these departures from traditional organization in most cases have little real significance. When this is considered in conjunction with the fact that even such departures as these are far in the minority, the extent of the domination of logically organized subject matter becomes apparent. Of the 160 courses in science which Beauchamp examined, ninety-three simply presented a topical outline of subject matter. This is probably a fair representation of the practice in most fields. He concludes :

> Examination of the studies which have been made discloses that the sole emphasis has been upon the deter-

mination of the principles or subject matter which should be included in our science courses. Apparently, no studies have been made of the difficulty of these materials. Placement of the topics or principles in the various courses is the determined by the logical demands of the subject rather than by the psychological characteristics of the learner.

This consideration is especially significant in light of the fact that since the beginning of the present century there has been a constantly increasing amount of criticism of the practice of permitting the demands of logically organized subjects to dominate the curriculum. Educational philosophers have pointed to the undesirable consequences of such a procedure and national committees have emphasized the importance of giving primary consideration to social needs and problems in organizing the curriculum. For example, the Commission on Character Education of the Department of Superintendence made this relevant observation :

> It is entirely conceivable that if schools insist upon limiting their function to attempting to teach pupils only in matters so academic as to have little or no direct bearing on the real social problems which people have to meet in some way or another, the public confidence and support which schools have thus far enjoyed to a remarkable degree may be lost.

Evidence of the domination of logically organized subject matter is also provided by the way in which new materials have been forced to find entrance into the curriculum. Traditional subjects, as a practice, have not been subjected to a continuous process of reorganization in terms of social situations and needs. Rather, they have rested for acceptance on tradition. The result is that when society has demanded the inclusion in the curriculum of new materials, a new *subject* or *course* is introduced, allied as clsosely as possible with one of the established fields, and given a place in the program of studies. Thus, the offerings of the schools have been multiplied within a generation. The extent of this soft of curriculum revision is indicated in the following observation in the National Survey of Secondary Education.

> The most significant changes over the full period are shown in the tendency to provide a much wider range of materials of instruction, aid these of a richer and more practical nature. Between 1860 and 1895, the number of units offered by the average school changes very little ; between 1895 and 1918, the average school shows an increment of approximately one unit per year ; and between 1918 and 1930, an increment of approximately two units per year is shown for the average school. The number of *different* courses offered increased 475 per cent between 1906 and 1930, while the total number offered more than doubled. These increments are far greater in the nonacademic than in the academic fields, but in each the tendency is to make the offering more immediately significant.

This procedure shows the inflexibility of a curriculum dominated by logically organized subject matter and the difficulty encountered in meeting social needs. This is not the only consequence of the procedure, however. As course has been added to course, a body of materials has developed with untold over-lappings and complexities. The result is a state of confusion which makes it difficult to plan for the rounded development of a given pupil with a minimum of wasted time and effort. Bode describes the situation as follows :

> If we note next how the schools adapted themselves to this rising tide of demands, we are in a position to see both how our educational system has become needlessly cumbersome and how it has become involved in a sorry confusion of purposes or aims. The cumbersomeness is a natural result of the tendency to meet new demands by the simple process of adding new courses without engaging in any basic reconstruction of the corriculum. If, for example, the pressure for a new subject, like music or art or commercial geography, became sufficiently strong, the

> situation was met by the expedient of adding new courses and special teachers . . .
>
> The result of this general tendency has naturally been to produce a curriculum containing a bewildering variety of more or less unrelated "subjects." New subjects were added as occasion arose, without disturbing those which were already in the curriculum. except to require them to move up so that the newcomer might have a seat along with the rest.

Many conditions have operated to make logical subject relationships exert such a potent influence on the educational program. Not the least of these is tradition. The use of logically organized subject matter as the center around which the work of the school is organized has been the prevailing practice for centuries. The assumption that the acquisition of knowledge constitutes effective learning, and the resultant problem of selecting that "knowledge which is of most worth" are matters of ancient origin. These questions were especially pertinent so long as education was considered a means of raising a person above the masses. The result of accepting this as the chief purpose for education was emphasis on erudition. This, consequently, became a fundamental objective of education which persisted down through the ages, as Morrison points out :

> From time immemorial, that man whose mind was fullest stored with the erudition of the ages had been conceived to be the best educated, and so education and erudition were thought to be one and the same. The curriculum was formulated with that principle in mind, and teachers were held to be best prepared who knew most about the subjects which they proposed to teach in the sense of being best informed about them.

Thus tradition has sanctioned the idea of education as a pursuit for the elite with a consequent emphasis on erudition. The inevitable result has been emphasis on knowledge of subjects rather than social effectiveness. American schools still labor under this eruditional concept of education. As steps are taken to make education serve its real function in a democratic social order, this concept will be changed and the logical relationship of subject matter assigned its appropriate place in organization of the curriculum of schools in a democracy. What this place should be is given consideration in a later chapter.

INFLUENCE OF THE TEXT BOOK

Another influence of great significance in curriculum development is the textbook. The general place it holds in educational thought, the dependence of teachers—especially of poorly trained teachers—on it, and methods of selecting textbooks for use are all important aspects of this influence.

The important place which the textbook holds in American education is especially noticeable to European observers. Hylla, in discussing American education in comparison with German education, says, "It is very significant that in place of our word 'instruction-hour,' almost always the term, 'recitation-period,' is used, Uher says of American education, "As far as methods are concerned, we can see the spreading of new tendencies, but this is far from being so general as many believe. The American school in this respect is rather below the average. A badly prepared teacher is dependent upon the textbook. This explains the long-windedness of many American textbooks and the array of details contained there...

The great dependence of American teachers on textbooks is, of course, generally recognized by American educators. Edmondson says that the textbook in thousands of classrooms determines not only the content of instruction but also the teaching procedures. Suzzalo, in the introduction to Fuller's 'Scientific Evaluation of Textbooks,' says :

> The textbook is the most important of the teacher's tools. In determining the subject matter of the child's experience,

it is more decisive in day-to-day affairs than is the course of study outlined by the school system. In determining teaching procedure the text is more influential from hour than a manual of methods. In fact the total series of textbooks in use by students and teachers are the real course of study and manual of teaching. This is not the usual theory, but it is actual fact.

Kimmel concludes in the National Survey of Secondary Education that : The most influential factor in the determination of the content in courses of study, based on internal evidence and the testimony of teachers, seems to be the representative textbooks.

Such opinions are supported by quantitative studies which indicate in general the dominance of the textbook in American education. Jenson asked 172 city superintendents of schools, "Do you build a course of study and then select a textbook, or, do you select a textbook and then build your course of study ?" Eighty-four and nine-tenths per cent of these superintendents replied that they built a course of study and then selected a textbook, while 22.1 per cent of them reported that they selected a textbook and then built a course of study. This would indicate that practically one-fourth of the city courses of study reported were directly dictated by textbooks. The extent to which the other courses of study were influenced by textbooks cannot be determined, but examination of course of study reveal verr few indeed that do not reflect to a marked degree the organization of textbooks customarily ussd. Statements from some of the city superintendents queried by Jenson throw interesting light on the problem. One superintendent, for example, stated : "Both ways have been done. I am under the impression that textbooks are selected first, as a rule," Another said. "Select textbooks to meet the need of the community, Then build a course around it." A third stated, "Sometimes a course is built with a textbook in mind ; at other times not." Still another said, "Our course of study is invariably the textbooks."

Bagley studied evidences of the dominance of the textbook in the classroom presented in reports of school surveys. The following are typical of the statements which he found of the observations and opinions of survey staffs :

> Text were followed almost slavishly ; the curiosity of the pupils was seldom aroused ; rarely was an inquiring spirit stimulated by the teacher.
>
> In M– – –schools, as in most American schools. textbooks are an important part of the machinery of instruction. To a considerable extent they determine both the content and the method of instruction. This is of necessity true when teachers are not well trained ; when competent professional supervision is generally lacking ; and when referencd materials are scarece, unsuitable, and inadequate. In practice the textbook is the course of study in most M———schools.
>
> Methods of instruction used……..represent too frequently a slavish memorization of the textbooks.
>
> The teachers in the small rural schools are very deficient in training and educational outlook. The blind dependence of the teachers upon textbooks is generally evident.

Bagley also studied the problem through observers' reports of 539 classroom exercises. These exercises were, presumably, a random sampling, representing elementary and high schools in cities, towns, villages, and the open country in thirty states. The results of this study indicate somewhat less dependence on the textbook than do the foregoing comments. They show that "one or another form of the socialized recitation and project methods appeared approximately as frequently in these lessons as did the 'straight' recitation from the single textbook." It was revealed that non-textbook methods were used in the city elementary schools in more than one third of all the lessons observed. It was found that in the high schools the textbook-recitation method is much more common, this method being noted in 42.8 per cent of the lessons observed.

The extent to which teachers restrict their teaching to textbook assignments and recitations appears to be closely related to training and experience. Bagley found that teachers with long periods of training tend to use non-textbook methods to a greater extent than teachers with short periods of training. He also found that the begining teacher, whatever his training, tends ta depend upon formal textbook methods mare than teachers with from two to five years' experience. Teachers with more than five years' experience revealed the least dependence upon textbook methods.

These finding suggest that further implications as to the extent of textbook teaching may be secured from consideration of the training and experience of teachers. According to Bachman, "In three-fourths of all the states, probably 50 per cent of all elementary teachers in service have had two years or more of preparation beyond high school, and in one-fourth, 50 per cent have had less than iwo years of preparation on the college level,"

Although the experience is apparently increasng, the same author finds that from 20 to 47 per cent of all elementary teachers round out their careers as elementary teachers in less than four years. Thus, it appears that a considerable proportion of elementary teachers have both the training and experience which tends to make them rely largely on textbooks. The same is probably true to a considerable extent of high school teachers.

However, the dominance of the textbook probably rests on foundations even more secure than the ignorance or helplessness teachers. Bode suggests that a foundamental misconception of the purpose of education, a misconception previously discussed, contributes to the slavish following of textbooks. He states :

> In part, at least, this predilection many spring from misdirected piety. The business of the schools is supposed to be limited to the preservation or perpetuation of our

> civilization. Consequently, we should teach the subjects in the curriculum as we teach the catechism, not to encourage a spirit of independence and inquiry, but to insure a set of correct responses...
>
> It is a fine thing for a teacher to have a rich intellectual background, provided that he makes no use of it. The disposition to engage in exploration beyond the limits of the textbooks is regarded as evidence of intellectual frivolity, if not of irreverence or bolshevism......
>
> Our worship of the textbook, then, appears to be a joint product of plain ignorance and an ignorant veneration of tradition. A combination of this sort can scarcely fail to make the world safe for the textbook.

The superiority of the American textbook is advanced by some as a reason for its continued place of prominence in educational practices. Cubberley speaks of the textbook as a distinctive American achievement. Winship extols the textbook as a developed in the United States. He says, "Nowhere in the world have they (textbooks) improved as in the United States. There is not a nation on earth in which the schoolbooks approach even faintly those of America."

The most potent factor insuring textbook dominance of American education, and the one with most implications for the curriculum, is the uniform prescription of textbooks by legislatures.

> The significant aspect of textbook uniformity under the laws now prevailing in the different states is the fact that in twenty-five states the uniform use of the books selected is prescribed for the state as a whole. whereas the laws of twenty-three states prescribe or permit the establishment of uniformity regulations over smaller units of school organization within the state.

There are, it is true, differences in the scope and the meaning of the uniformity regulations in the different state-adoption states. In three states the adopting body does not have authority to prescribe textbooks beyond the elementary graees, while in three other states the adopting agency may, but is not required to, select the books which are to be used in the high schools. Fifteen of the twenty-five uniformity states limit the books prescribed to a single text for each grade or subject, while the other ten allow the adopting agency to select two or more texts for each subject. From this latter multiple list, local school authorities may then select and prescribe the books to be used in the schools under their jurisdiction.

Another difference in regulations is found in the extent to which they apply to different types of local units within the state. Nine of the state-uniformity units exempt by law either cities or school districts of a specified class from the uniformity rule which in general applies to the schools of that state. The reason given for this apparent discrimination is that some communities tend to maintain higher educational standards.

Historically the tend has been toward state-uniformity of textbooks. By 1890 textbooks were selected and prescribed on a state-wide basis in fourteen states. Fifteen years later, eleven additional states had adopted uniformity while two had discontinued it, leaving a net total of twenty-three states requiring uniformity by 1905. Since then three have been few changes. There are now twenty-five states requiring some type of textbook uniformity.

The political aspects of this problem are of such importance that the issue is kept almost constantly before the voting public. Frequent efforts are made to induce additional states to adopt state uniformity, or to modify or repeal textbook laws in states where uniformity is prescribed. The layman, as a rule, "favors long-period adoptions, uniformity of adoptions over wide political units, the adoption of a single rather than several texts, free textbooks, and is readily tempted by State publication and local authorship without stopping to consider the disadvantages."

The result is emphasis upon textbook teaching. Laymen assume that this is the type of instructional program that should be carried on. Continual emphasis on textbook adoptions not only encourages them to hold to this belief, but also emphasizes to the teacher the need of covering certain textbook materials and gives the impression that it is the primary function of the teacher to see that this is done. Thus, the practice of uniform prescription of textbook provides a bassis upon which textbook domination rests with considerable security.

THE INFLUENCE OF ORGANIZED MINORITY GROUPS

Another restraining influence upon the instructional program of the school is the pressure exerted by organized minority groups. These groups frequently attempt to thwart independent efforts on the part of the school to deal with vital with vital problems and often try to force the school to teach specific solutions to problems. Pressure is made operative in two ways; first, through control of school legislation, and second, through control of teaching personnel.

Control of school legislation has been possible because of the constitutional provision that legislatures have the power and duty of providing free public schools and the "means of education." The constitutional theory is that public opinion regarding the function of the schools should be represented in constitutions and in legislative enactments. Constitutions, because of their nature, deal less with details and therefore respond less readily to change than do statutes. They cannot be molded so easily by the machinations of special interests and minority groups. Touched in general terms, they provide the basis law of the state, leaving details to be provided by specific legislative enactments.

In recognizing the constitutional rights of the people to determine the general nature of their schools, however, the way is left open for organized minority groups to enforce restrictions upon the offerings of the school or to dictate specific teachings that do not represent the majority. Often these teachings are detrimental to society and are real deterrents to social progress.

Clothed with indisputable constitutional power, legislatures in all the states have found in school legislation a means of satisfying the demands of various groups, groups frequently consisting of small but vigorous minorities. Whether it be sound procedure or not, the general public allows legislative action inspired by special group interests to determine what shall or shall not be taught schools. Not all school legislation has its inception in the selfish desires of interested groups, but it is significant that much of it does, thereby giving official sanction to their demands. An example of the effectiveness of the organized effort of a minority group to control what is taught in the schools may be cited from the legislation that followed the activities of the various temperance :

> In 1923 all but five states made mandatory the teaching of these subjects (physiology and hygiene), the statutes generally requiring in struction in "the effects of alcoholic drinks and narcotics upon the 'human system." By 1929 every state was said to have upon its statute books some law which prescribed temperance instruction, either directly or through the observance of Temperance Day.

Such organizations frequently attempt to carry on their work on a national scale, conducting campaigns of propaganda in the the various states preceding and during the sessions of the legislature. Such was the plan of the "fundamentalists" a few years ago who succeeded in securing the passage of monkey bills. Referring to this type of legislation, Flanders says :

> There are agencies, entirely apart from the government and therefore not subject to popular control, which are definitely working to induce legislatures to enact specific laws directing that certain subjects be taught. One cannot read the laws of the several states without being impressed by the frequent recurrence of the same phraseology.

Table 1

Character and Extent of Legislative control of Public-School and Common-School Curricusa, 1930

Subject	*Number of States*	*Subject*	*Number of States*
Nature of alcoholic drinks	48	Drawing	13
Physiology and hygiene	39	Bible	13
History (United States)	38	Prevention of communicable diseases	12
Constitution (United States)	38	Composition	12
Feading	36	Language	11
Arithmetic	36	Music	9
Geography	35	Manual training	7
Writing	34	Domestic science	7
Spelling	34	Thrift	5
Grammar	32	Safety	4
Physical training	29	Hygiene and sanitation	4
Citizenship	26	Elementary science	4
History (State)	22	Algebra	3
Civil government	22	Preservation of birds and game	2
Morals	21	Industrial work	2
Humane treatment of animals	20	Spanish	1
Health	17	Forestry	1
Agriculture	14		

Wholeasale assumption of control of the curriculum by legislatures is due almost wholly to pressure brought bear upon these bodies by organized minority groups. It is not a question of whether these things should or should not be included in tne school curricula, but rather a question as to who should prescribe them, politicians and lobbying groups, of educators.

The extent to which legislatures have engaged in curriclum making is shown in comparatively recent studies. For example Nixon shows that legislative prescriptions for elementary and high schools in Ohio range from the statutory requirement of the three R's in 1825 to the compulsory teaching of the state and federal constitutions in 1923. He also shows that legislative acts affecting the curriculum have increased materially since 1900. Similarly, Flandders finds that the number of legislative prescriptions increased 65 per cent during the twenty-year interval, 1903 – 1923.

The present extent of legislative prescription of high school curricula is indicated in the following table taken from the National Survey of Secondary Education.

Doubtless, much minority group legislation regarding the curriculum is enacted because of the conservatism of teachers and leaders in education. Inertia, complacency, and indifference of teachers have also played an important part. In other words when a need has arisen for modifying the curriculum, teachers, instead of assuming their prerogative of leadership, have by their complacencey either forced outside groups to demand the inclusion of needed instructional materials ; or, if they made any efforts toward change, have allowed the opposition of minority groups to thwart them. Cansequently, too frequently, the 'status quo' has been changed or maintained at the will of forces outside the schools themselves.

The other principal means thraugh which the pressure of minority groups is exerted on the curriculum is through direct relationship with the teaching personnel. This takes the from of making certain materials available for the use of teachers or of holding teaching positions and advancement in jeopardy through local boards of education.

Many of the materials prepared by minority groups are of fundamental educational value. On the other hand, many times they are prepared with the deliberate purpose of propagandizing the nation through the schools for certain special interests. For example, the purpose of one organization cited by Pierce is as follows :

> To put into the hands of school children a book conforming theories held by the utilities became one of the problems of the Public Relations Committee. This was considered necessary in order that future generations of of Americans will be staunch friends of the public utilities..."

The control over teaching positions and advancement through local boards of education is often a subtle but nevertheless a real influence. Since the men who control our schools as a rule also control the social and financial affairs of the community, they are in position to dominate the work of the schools. Beale positions out that :

> They (minority groups) see that certain subjects are tabooed : government control of railroads in a railroad town ; conditions in the mines in a mining town ; labor questions and company police in a steel town ; criticism of the mill awners in a textile town ; the fact that a particular local business is not paying its share of school taxes.

The creation of a better social involves change. Therefore many powerful minority groups which benefit from the present order inevitably will oppose any social progress. It is these groups that exert pressure upon the schools to accept conditions as they are. They insist, to be sure, that the schools develop character, instill respect for law and order, make good citizens, and teach patriotism. However, when interpreted from the point of view of the interested groups, this means simply the acceptance of things as they are.

Obviously, so long as organized minority groups are allowed to exert such a controlling influence upon education, schools will be unable to exert a positive influnce on social progress. Our schools will remain impotent and helpless so long as they are complacent and indifferent to the vital issuses of present, or else deal with them in such a way as to present solutions dictated by some special interest or minoriiy group. To free the schools from these influences calls for both courage and vision on the part of teachers and educational leaders. It also demands an awakened public opinion as to the true function and potential influence of the school in a democratic society.

INFLUENCE OF QUANTITATIVE STANDARDS

A third significant influence which must be accorded consideration in curriculum development finds expression in quantitative standards. These standards have taken various forms and have influenced the educational program at various points. Their development has been a part of the scientific movement in education which has held such an important place in educational work and thought during the present century. While many highly desirable results have accrued from the use of quantitative standards, in many cases they have now reached a stage of inflexibility which results in a limiting influence on curriculum development. Consequently, they are accorded consideration as one of the major influences which must be given special consideration in the development of a curriculum which meets social needs more adequately.

Quantitative standards which have developed in connection with tests of intelligence and achievement, and in connection with college entrance and institutional accreditment, have exerted the most important influence on the curriculum. Brief consideration will be given to each of these.

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The development of intelligence tests may be said to have begun about 1905, the year Alfred Binet, a noted French psychologist, devised the first scientifically constructed test. He had been given the task of selecting candidates for special schools for subnormals in Paris. To accomplish this he devised a technique for measuring. Psychologists generally were much interested. This interest resulted in many refinements of Binet's techniques. By 1915 many series of tests had been developed and statistical techniques were perfected to the point where tests were required to meet definite standards with respect to validity and reliability. Several important revisions and adaptations of the Binet scale had been made by that time.

During the World War, 17,00,000 soldiers and officers of the United States Army were given intelligence tests. After the War there was a great interest and enthuisasm in the use of intelligence tests in schools. The National Intelligence Test was constructed by a committee of psychologists who had been concerned with the development of the army test, and was given wide use. Within less than a year after publication, over 575,00 copies were sold, and during 1922–23, 800,000 copies were distributed. It is estimated that by 1923, 20,000,000 intelligence tests of various kinds had been sold.

The achievement test movement may be said to have begun with report in 1897 of Rice's test of the spelling ability of 33,000 school children. Stone's 'Reasoning Test in Arithmetic' appeared in 1908 and Thorndike's 'Scale for Measuring the Quality of Handwriting in 1910'.

From these beginnings, mental and educational tests developed in great numbers and came to occupy an important place in educational practices. A review of test literature made in 1922 revealed fifty functions tests had performed. Authors of tests themselves set forth sixteen different functions.

The standards thus evolved exerted great influence on curriculum development. The influence has been in two directions. On the one hand there has been a tendency to recognize more.

fully the nature and extent of individual differences among pupils. This has resulted in the development of the curriculum in such ways as to permit adjustment to individual needs. Rigidity of offering has thus been lessened through test development. The other direction of influence, however, has been a direct opposition to this broadening influence. The availability of grade standards and norms as supplied by tests has encouraged the practice of defining minimum essentials for the respective grades, thus increasing the inflexibility of the curriculum.

This has been especially significant, inasmuch as the tendency has been to state the minimum essentials in terms of abilities measured by standard tests The result has been emphasis throughout the instructional program and the development of the curriculum upon the objectively measurable aspects of the learning process. Facts and skills, as a result, have been accorded far more than their equitable share of attention, without regard for attitudes and appreciations ; and drill, memorization, and recitation have too generally dominated instruction.

This tendency is suggested by the almost complete emphasis in courses of study on measurement of skills and fact to the exclusion of other types of outcomes. Harap and Bayne appraised the tests suggested in the courses of study which they examined as follows :

> They do not test for expression and creative ability ; they do not test for the ability to organize parts into a coherent product ; they test for reasoning only to a limited degree ; they do not test for the ability to apply facts, skills, or generalizations ; they do not test for the accomplishment of child or adult objectives. Beyond the basic discovery of the brief answer and objective scoring, ingenuity in test making has run out. It is of fundamental importance that the test should be based on the objectives of the given course and that the test items should elicit lifelike responses.

Other points of influence, many of them favorable, of standardized tests on curriculum development might be mentioned, but the principal point for our purpose should be clear. The demand for uniformity, the undue emphasis on objective measurement and statistical treatment, and the encouragement of a type of instructional program which emphasizes drill, memorization, and recitation forms an influence that must be recognized as limiting the development of a curriculum of major social significance.

Quantitative standards have also exerted great influence on the secondary school curriculum through the development of college entrance requirements. The demand for uniform college entrance requirements, which began to appear late in the nineteenth century, resulted in the rapid growth and power of regional standardizing agencies.

Such terms as hours, credits, points, courses, majors, units, and semester hours came to have meaning in terms of quantity. These were applied with varying meanings until the "Carnegie Unit" brought a semblance of order out of the confusion. This unit was heralded as a quantitative means of checking up on the quality of education.

From the definition of the Carnegie Unit many other aspects of standardization developed until the curriculum of the high school especially was dictated in many particulars by standardizing agencies. Deviations from average practice were discouraged and unthinking observance of detailed requirements came to be a general practice. This was especially true in curriculum development. The first question usually asked in connection with a proposal for curriculum development in the secondary school was cocerning the attitude of the accrediting agency toward such an undertaking.

As the defects of such standardization became increasingly clear, criticism was leveled at the procedure. Illustrative is a comment made by White in a 1930 issues of the *High School Quarterly*. He states :

> Standardization. at best, is a counsel of mediocrity. Mediocrity is normal, but it is not excellence. To encourage deviation from it in the right direction is the duty of every standardizing agency.

Gradually more and more educational leaders demanded changes in accrediting practices. In 1932 Jessup stated in an address to the North Central Association of Colleges and Secondary Schools :

> We have standardized school years, school months, school weeks, school days, school hours and school minutes in terms of units, credits, points, majors. At the rate we have been going in recent years, we will soon interpret education in terms of split seconds.

The most significant development at the present time is the attack on the problem being made by the North Central Association. A committee has been working for a considerable period of time to devise procedures for accreditment that will eliminate the bad effects of the quantitative standards of the type now employed. The general approach to the problem made by this committee marks the development of a most significant point of view. They state :

> As a first step in the consideration of this program it seems desirable to discard the word standard from our thinking. This is not proposed on the ground that standards are of no importance or that the word has not served a useful purpose in the past. It is because the concept of standard in the old sense is foreign both to the spirit and to the method of the new plan . . . .
>
> Then, too. in its long history as an accrediting term the word has gathered its own meanings. It implies minimal conditions of acceptability, uniformity of pattern, and, too often, mediocrity of status. Connotations like these interfere with thinking about a program shaped to permit variety and individuality. Our task is to create a plan of accrediting through which will flow the spirit of freedom and the urge of institutional growth.

> This is not easy in any case, and one of the hampering influences is the vocabulary to which we are accustomed. Hours, credits, points. courses, majors, units, semesters, degrees, standards are symbols of status and not of processes. Their wide employment tends to mechanize our thinking about education, It would be fortunate if we could discard all of them and form a fresh vocabulary that would more adequately signify the vital character of education.

Inasmuch as the Carnegie Foundation was instrumental in developing the Carnegie Unit officers of the Foundation were asked their opinion on developments in the field of standardization of colleges. The following statement was made in the 1933 Annual Report of the Foundation in answer to this query :

> Today, none recognizes more clearly than the Foundation that these standards have served their purpose. With changed conditions and sharper and more wieldy tools, such expedients become obsolete. They should undoubtedly give place to more flexible, more individual, more exact and revealing standards of performance as rapidly as these may be achieved.
>
> The Carnegie Foundation for the Advancement of Teaching looks with favor upon any and all means of judging qualifications for college admission which recent widespread experiment, scientifically and practically appraised, reveals as distinctly better than previous methods. A system of continuous individual records, including information about every phase of student interest and accomplishment, represents a decided advance over any basis for college admission previously in use. Certainly it is a marked improvement upon the "unit" system which in the early years of the present century began to being order into the much confused situation respecting admission to college.

Thus far, only the North Central Association has moved to revise its procedures in a significant way and the work in this Association has been restricted to college accreditment. But the general recognition of the problems developed by the rigid use of quantitative standards in accreditment and the nature of the attack on the problem at the college level provide ample grounds to believe that curriculum development will be rapidly freed from undesirable elements in accreditment and standardization.

IMPLICATIONS FOR CURRICULUM PROGRAMS

In developing a practical program of curriculum making, influences such as the ones discussed in this chapter must be given due consideration. They represent potent forces with which the curriculum worker must deal. Two points of view may result from such consideration. These points of view are reflected in educational literature. It is generally recognized that many changes needed in the curriculum would bring conflict with some of the interests which make operative such influences as those discussed, and would involve encounters with many trying and difficult problems.

According to one point of view, these influences are so well intrenched and the teaching force of the nation is so inadequate in training and ability that no fundamental attack on the problem of curriculum development dare be made. Proponents of this point of view counsel continued "shuffling of courses and topics" as the only *practical* procedure that can be followed. In brief, the recognize the need for a fundamental attack on the problems, but hold that we are not in position to make such an attack.

According to the other point of view, the only way in which to achieve fundamental change and to develop the ability to deal with the problems involved is to cease palliative measures and halfway steps and to attack such phases of the problems as we do treat in a fundamental way. Better a little activity which strikes at a fundamental point than a great deal which merely skirts the edges of the real problems. It is further held that these influences which block fundamental curriculum development are not so intrenched that they can prevent real progress.

The issue which the curriculum worker must face, consequently, is whether, in view of the influences which operate to maintain existing conditions and practices, comprehensive and fundamental curriculum programs should be projected to meet the challenge for education discussed in the preceding chapter.

If such a program is projected, it seems evident that major consideration must be given to the problems of educating laymen, influencing the pre-service training of teachers, and providing comprehensive in-service training opportunities. Only as all of these factors are included in a program of curriculum development can important issues and problems be attacked with assurance that changes found desirable may be effected.

3

Greek Secondary School Curricula

The scope and character of any enterprise are controlled in the main by the meanings ascribed certain basic terms and the relationships that are assumed to exit between the various elements involved in the enterprise. This is but another way of saying that the nature of an enterprise is determined largely by the definitions and principles that are accepted for guidance.

This is especially applicable in curriculum development, inasmuch as there are widely varying concepts in these regards. Consequently, early in the projection of a curriculum program it becomes important to give consideration to basic concepts and relationships that are to control the work. Such consideration will lessen to an appreciable extent misunderstandings and confusion as work progresses.

In this chapter consideration is given to concepts of the nature of the curriculum and in the following chapter to principles that are basic to curriculum development.

DEFINITIONS OF THE CURRICULUM

There are many concepts of great importance in curriculum development, but perhaps the one which exerts the most farreaching influence on programs as they actually develop is in connection with the nature of the curriculum itself. The purposes of curriculum programs, the steps in their development, and the means employed to achieve the purposes are all conditioned in important ways by this concept. This is especially noticeable inasmuch as there are widely different ideas of the curriculum, and, consequently, of what is involved in curriculum making.

Definitions of the curriculum fall into three general groups. The first group includes uses of the term in a very restricted sense, that is, to indicate a group of subjects or fields of study arranged in a particular sequence. This definition is employed especially in secondary schools and colleges.

The terms, classical curriculum, college preparatory curriculum, and general curriculum, for example, refer to the subjects and sequence of subjects required of given groups of pupils for graduation. When this meaning is employed, the plural form is often used, reference being made to the various curricula of a school. Specification of time units and sequences of large segments of subject matter are the principal tasks of curriculum making when this definition of the curriculum is accepted.

This concept of the curriculum was held in the original phases of the work of the North Central Association's Committee on Standards for use in the reorganization of secondary school curricula. The report of the committee states : "The term *curricula* was obviously intended to mean a sequence of units organized as four-year programs for two or more groups of secondary school students."

Some writers on educational problems hold this general concept of the curriculum. For example, Puckett employs the definition which follows :

> *Curriculum* is the selection, organization, and administration of a body of subject matter designed to lead the pupil on to some definite life objective. Examples are the

college preparatory. the industrial arts, and general curricula.

The second group of definitions of curriculum is based on the concept that the curriculum is the subject matter or content that is to be employed in instruction. This concept extends the meaning just discussed to include, in addition to the selection and arrangement of subjects, the selection and arrangement of the content in these subjects. Curriculum making from this point of view consists largely in selecting and arranging the topics that are to be taught in the various subjects. This meaning is subscribed to by a number of students of educational problems. For example, Briggs implies this meaning when he states :

> Although the importance of the curriculum has always been recognized, it is only at long intervals that material changes are made in it. One would not go far wrong in asserting that the history of education is written in terms of these changes in subject matter.

The third group of definitions is much broader than the concepts of the curriculum expressed by the foregoing groups. The definitoins in this latter group are based on the experience of the learner. The curriculum under this concept involves all elements of experience rather than one only, that is, the content or subject matter that may be employed in experience. The task of curriculum making is very complex under this concept Pupil interests and activities, aims, method, content, in fact everything that influences the experience of the learner must be considered during the process of curriculum making.

Numerous writers subscribe to this latter concept. The statements which follow serve for illustration.

> The curriculum should be a series of guided experiences so related and so arranged that what is learned in one experience serves to enrich and make more valuable the experiences that follow.

> The curriculum represents the experiences in which pupils are expected to engage in school, and the general order of sequence in which these experiences are to come.

> The word 'curriculum' is Latin for 'race-course,' or the 'race' itself,—a place of deeds, or a series of deeds. As applied to education it is 'that series of things which children and youth must do and experience' by way of developing ability to do the things well that make up the affairs of adult life.

A canvass of writers on curriculum problems indicates that most of them deal with the curriculum from the experience point of view. They treat topics and problems in research and discussion which deal with many aspects of the learner's experience in addition to the consent employed. For example. Hopkins deals specifically with aims, content, method, and outcomes He discusses, as well, certain administrative problems as they relate ta curriculum making.

Harap discusses, among other topics, aims, activities, teaching units, repetition to assure permanence of learning, formulating tests and practice materials, and grade placement.

The bibliography on curriculum materials of the Society for Curriculum Study includes in its major classification the following topics : objectives, learning activities, time allotment, grade placement, providing for mastery, and learning equipment and supplies. As is suggested by this classification, it is general practice for students of the curriculum to include in their writing and research, topics and problems that relate to all the varied forces that condition experience.

Cocking secured an indication of the meaning employed in directing recognized practice by means of statements from twelve selected cities engaged in outstanding curriculum making programs. He concludes, "...it would seem clear that the term is being used to include all that has to do with the instructional work of the school."

Items included in courses of study also suggest the tendency to employ the inclusive definition to direct practice. An analysis of the contents of thirty-five state courses of study shows that among other items the following occur frequently : guiding principles, time allotments, general educational objectives, subject objectives, grade objectives, outilne of content, teaching methods and procedures, pupil activities, pupil attainments, reference materials for both teacher and pupil, illustrative lessons, and units of work. This shows that the general work of curriculum making includes more than the allocation of time units, the arrangement of subjects, and the selection of content; and that the more inclusive definition, the latter one presented heretofore, has been employed in the curriculum program from which these courses of study developed.

This conclusion is further supported by the items suggested in the Stratemeyer-Bruner 'Rating Scale for Elementary Courses of Study' as being points in the courses of study which they examined. The items follow :

1. Clear statement of objectives.
2. Provisions for individual differences.
3. Suggestions under each subject gives teacher insight into value of subject matter and methods of teaching it.
4. Illustrative lessons given.
5. Material based on present conditions.
6. Well-selected references.

The tendency for both theory and practice to support the broader interpretation of the curriculum very probably has been encouraged by restrictions imposed on curriculum making by the more limited definitions. In employing either of the more limited ones, the curriculum tends to become static and mechanistic, while the experience concept gives it vitality and life. The limited concepts relate to the classroom at only one point, the latter concept at all points.

The limited concepts imply a curriculum apart from the learner, the larger concept sees the curriculm only through the learner. Taba points out the importance of this contrast. "The curriculum," she states, "cannot be regarded as a dead and summative body of all the materials, experiences, and activities contained in the educational process. It is a living whole, composed of experience actually going on in school. As such it is what it becomes in practice. Its content is identical to the content of the actual experience of the learners."

The vital element in the broader concept of the curriculum and the direct relationship to work in the classroom have no doubt contributed much to the general acceptance of this concept among curriculum workers. This broad concept is accepted in the development of the discussion presented in this book. Stated specifically, the school curriculum is held to be composed of all the experiences children have under the guidance of teachers.

THE CURRICULUM AND CURRICULUM DEVELOPMENT

When the curriculum is defined to include all elements of experience, curriculum development becomes a complicated process. It is not sufficient, in making the curriculum, to shuffle courses, add or eliminate subject matter, or rearrange topics. Each of these activities may contribute at some point to the development of a well-conceived curriculum; but alone or in chance relationship they more often than not lead to confusion.

An adequate curriculum can be developed only when all elements in the experience of the learner are considered, and when an orderly program is provided to assist the teacher in bringing these varied elements into suitable relationships.

This is the task of curriculum development. It can be accomplished only through assistance from many workers and many fields of study. Philosophy, sociology, psychology, and the subject matter fields must all be called upon for help. The materials from these fields, however, cannot be employed by an additive method. Each field contributes its share of materials—raw materials for curriculum making—but mere compilation by no means represents the process of curriculum development. Materials must be so selected and arranged as to become a unity in the experience of the learner.

The process is one of synthesis rather than compilation. In providing for this synthesis lies the peculiar task of curriculum development. This task is in clear contrast to the work in most fields of study where the major emphasis is given to organization or development of materials within particular cultural limitations. Thus, curriculum considered as a field of study reprsents no strictly limited body of content, but rather a process or procedure,

THE CURRICULUM AND THE PROGRAM OF STUDIES

"Program of studies" is a term that is used in connection with the secondary school curriculum. The term as generally accepted refers to the subjects of study offered by a given school and the arrangement or sequence of these subjects. Tryon, Smith. and Rood made a study of a large number of programs of study. They include in their study lists of subjects for which the number of periods per week was specified and constants and variables were indicated. They give a composite program of studies for the junior high school that is presented in Table II for illustration.

When the definition of the program of studies is compared with the most limited concept of the curriculum, it is found that the terms are employed with essentially the same meanings. Use of the term program of studies, however, to indicate the arrangement and specification of subjects, tends to eliminate confusion in dealing with curriculum problems. When so employed, the term curriculum may be used consistently with the broad meaning suggested heretofore. Preparing the program of studies then becomes one of the specific tasks to be accomplished in a curriculum program.

Table 2

A Program of Studies for the Junior High School Based on Practices in Seventy-Eight Centers

	Average Number Periods Per Week		*Average Number Periods Per Week*		*Average Number Periods Per Week*
Seventh Grade :		Eighth Grade :		Ninth Grade :	
English	7	English	5	English	5
Social studies	6	Social studies	5	Social studies	5
Mathematics	5	Mathematics	5	Mathematics	5
Industrial arts	4	Home economics	4	Health	2
Home economics	3	Industrial arts	3	Foreign language	5
Health	3	Health	2½	Industrial arts	5
Music	2	Science	3	Home economics	5
Art	2	Music	2	Commercial subjects	5
		Art	2	Science	5
		Foreign language	5	Music	3
		Commercial subjects	4	Art	3

THE CURRICULUM AND THE COURSE OF STUDY

The relationship between the curriculum and the course of study is an important one for clear understanding of curriculum programs. Curriculum and course of study are sometimes used synonymous. For example, Davis states : "The curriculum is the course of study." This has, in fact, been quite a generally accepted concept. Not infrequently curriculum programs have had as their one goal revision of courses of study, thus indicating by action at least that the concept expressed above served to guide the programs.

When the curriculum is looked upon as being composed of the actual experiences children have under the direction of teachers, it obviously is impossible to consider it as synonymous with the course of study. In this case, the course of study becomes a printed or guide which has been prepared to assist teacher to direct satisfactorily the development of the curriculum. This contrast is well drawn in the section on curriculum of the Arithmetic Yearbook of the National Society for the Study of Education. "The 'curriculum," it is stated, "may be defined as the totality of subject matter, activities, and experiences which constitute a pupil's school life. A 'course of study' is the material, usually in pamphlet form, which sets forth for the teacher such items as the objectives and content of a given subject, and the activities and books to be used to accomplish desired results."

The course of study may be likened to the plants and specifications for a building. Both are carefully developed suggestions for directing a process ; the one a construction process with building materials, the other a growth process with human abilities. Just as the plans and specifications are not the building, neither is the course of study the curriculum, even though in both cases there should be an intimate relationship between the two. Obviously, a good course of study is a valuable aid to the development of a good curriculum.

However, it is entirely possible for a school to have a superior course of study and a poor curriculum, or a poor course of study and a superior curriculum. If this concept of the course of study is held clealy in mind it will eliminate much confusion in the process of curriculum development. It will be noted in the following discussion how the distinction in the meaning of these two terms is an essential basis for proceeding with work on the curriculum.

WHO MAKES THE CURRICULUM

Much discussion has been given to the problem of who should make the curriculum. Especially has the question of the responsibility of teachers in this regard been a point of dispute. It has been maintained by some that only specialists can perform the intricate tasks involved in curriculum making. Others have contended that, since the teacher is closer to classroom situations than the specialist, he should have a majar part in curriculum development. Bagley especially emphasizes the former point of view and ridicules the latter one, as well as those workers in the field of curriculum development who project comprehensive programs of curriculum making.

He states in a recent discussion of the matter that the tendency for certain individuals to undertake study of the total curriculum problem has resulted in a state of confusion. He holds that study of the curriculum in city school systems by committees of teachers has become an educational fashion which is based on the "silly" and "tragic" idea that each community should have a curriculum of its own.

Whipple takes the same position. He states :

> Too much of present-day curriculum making is amateurish trifling and a sheer waste of time—nay, worse than that, an injection of pernicious confusion in what should be orderly progress. The let-everybody-pitch-in-and-help method is ludicrous when applied to curriculum-building. It is too much like inviting a group of practical electricians to redesign a modern power plant.

The other point of view is expressed in an answer to Whipple's aticle :

> Some of this work is doubtless amateurish ; but all of it has helped to focus the attention of teachers and school officials on the faults of the past scheme and on the present needs of the pupils and school.
>
> No, curriculum making by the teachers, at its worst, has not torn down the educational structure; neither has it brought about the dis-organization which the "viewers with alarm" would have us see as the sole result. .. (It) has served to turn the spot-light of scrutiny on the old methods and materials which were formerly used without questioning; it has motivated study in the field of the curriculum and has helped to reveal to teachers some idea of what the new may accomplish. . . .
>
> Rather than wrecking the machine, the teachers, in the process of curriculum making, are able to become acquainted with the mechanism which they are called upon to operate, to keep in repair and to improve.

Unquestionably there will always be many fundamental disagreements about the objectives and procedures of curriculum development, but much disagreement of the type just illustrated arises out of different concepts of the curriculum and its meaning.

Shall teachers participate in curriculum making ? If so, in what ways ? These questions can be answered only in light of the definition accepted for the curriculum. If the curriculum and the program of studies are considered synonymous the answer may be one thing. On the other hand, if reference is to the preparation of a course of study, the answer may be entirely different. When the curriculum is held to be composed of the experiences children have under the guidance of teachers, it becomes obvious that teachers must participate in curriculum development. It is under their direction that the curriculum actually takes form and they engage in curriculum development regardless of the formal recognition given the process. They do so, poorly or well, according to their previous training, their ability, and the assistance that is rendered them.

But what of the participation of teachers in various phases of curriculum development, especially in writing courses of study ? This is the problem to which attention is next briefly turned.

WHO MAKES THE COURSE OF STUDY

This problem will be considered in detail in Chapter 16. It is treated in this chapter only in so far as is necessary to make clear the general point of view held toward this phase of curriculum development.

Mass participation in course of study writing provides the basis of many criticisms of curriculum development and is possibly what Bagley and Whipple consider undesirable. This procedure for preparing courses of study, in most cases, probably grows out of the point of view that the course of study and the curriculum as synonymous, and consequently that general participation in curriculum making means general participation in course of study writing.

Yet it seems doubtful that anyone who has had wide experience in preparing courses of study would look on it as a task that could be performed satisfactorily by large groups of teachers.

As a matter of fact, it is a highly technical task requiring much intensive work. It involves the selection and organization of contributions from technical studies by specialists, from the general experience of teachers, and from the work of special committees in such form that they can be employed easily by teachers to direct instruction. It is the rare teacher indeed who can participate with effectiveness directly in this phase of curriculum making. Such specialized tasks should be undertaken by individuals or committees specially prepared to do them.

However, those who do the actual writing of courses of study, in order to do an efficient job, must build their work on general teacher experience if the courses are to serve their purpose satisfactorily.

Thus, much of the work of curriculum improvement takes place ahead of course of study preparation and independently of it. In brief, a well-conceived program of curriculum improvement is so much larger than the mere task of preparing courses of study that, although select groups do this specialized task, there are still many phases of the program to be carried forward in which the general participation of teachers is needed.

A curriculum program should represent an organization of all available means of improving the curriculum in such a way that each will supplement the other.

When the is done, writing the course of study will assume proper relationship to the larger program of curriculum making. It will be considered neither a task to be carried out by a select group working entirely apart from the general teaching force, nor an undertaking to be achieved alone through general work and discussion by all teachers. Rather, a select group will assume the direct responsibility for bringing into organized form contributions from the general experience of teachers and from technical studies by specialists in the various fields.

Writing a course of study, then, is but one phase of a well-conceived curriculum program, and when so considered, assumes proper relationship to the larger program of curriculum making in which specialist, administrator, supervisor, and teacher must work co-operatively, each making his particular contribution to the development of an improved curriculum.

RELATION OF CURRICULUM DEVELOPMENT TO ADMINISTRATION

The major function of administration is to see that boys and girls are provided optimum educational opportunities. The adequacy of educational opportunities is conditioned by a variety of factors, such as finance, physical plant, supplies and equipment, and the teaching personnel. Among these many factors, one of the most potent is the procedure for synthesizing the various forces that directly influence the experiences of children. Administration, to be effective, must concern itself vitally with this procedure, which is curriculum development.

The importance of curriculum development as an administrative responsibility has been recognized to varying degrees. In a great many cases, this task is left almost wholly to the undirected and unaided efforts of teachers.

This may be accounted for to a considerable extent by the fact that the period from 1900 to 1930 was a time of rapid material expansion in public education. Phenomenal increases in enrollments, resulting from both an increasing population and a tendency for children to spend more years in school, defined the problems to which the school administrator gave a major part of his time and attention.

The construction and maintenance of school buildings, supply management, janitorial service, budgetary procedures, insurance, accounting, organization of classes and schools—these and similar problems persistently pushed to the fore. The resulting emphasis on the material and management side of school administration finds expression not only in the work of administrators, but also in the training offered them by higher institutions.

If the time spent on the study of a particular subject is used as a criterion of emphasis, we might fairly conclude in many cases that it is more important for a school administrator to know how to wash windows and sweep floors, or what records and forms to employ in supply management, than it is for him to know how to determine and employ aims of education, or for him to understand and appreciate the place of public schools in American life and to have a clear concept of their responsibility.

Thus, problems encountered in the field and training in school administration provided by schools of education have often encouraged administrators to overlook responsibilities related directly to the instructional program.

However, there has been an increasing tendency to recognize that the material and technical aspects of the educational program are only means to an end, and that the end is the growth of boys and girls toward the realization of acceptable ideals. Concerning the training provided for administrators by schools of education, Hill states :

> No longer, in our best schools of education, is it possible for one to obtain an advanced degree in school administration without having acquired a sufficiently comprehensive knowledge of education in general, its aims, its agents, its organization, its techniques, to make clear the functions of administrative procedures.

Administrator are giving greater emphasis to the instructional aspects of administration, as is evidenced by the large number of supervisory and curriculum programs carried on in public schools. The idea gains in currency that an administrator who lives up to his full responsibility will interpret his entire program in terms of the growth of the boys and girls in his school system, and will accept as his principal responsibility and greatest opportunity the development of an instructional progrom that will achieve this end.

Unfortunately, however, in many "so-called" curriculum programs, administrators are concerned almost wholly with the development of courses of study. The methods employed in such programs often leave the curriculum little changed. Although this emphasis may be a necessary step toward the development of comprehensive curriculum programs, there is pressing need in American education for administrators to become more concerned with the larger task of curriculum making.

RELATION OF CURRICULUM DEVELOPMENT TO SUPERVISION

The activities involved in operating a school may be classified under three major heads : administration, supervision, and instruction. As Knudsen points out in his treatment of supervision, it is impossible to draw a clear line of distinction between administrative and supervisory activities. For the purposes of his treatment, he includes in supervision those activities that are involved in studying classroom teaching by actual contact with the teacher at work.

He further points out that this is a more restricted concept than often is applied to supervision. Yet it gives a clearness of meaning not provided by general uses of the term. This restricted definition also appears to indicate those activities that are generally thought of as constituting supervision. Hence, this definition is accepted in this discussion.

Supervision depends for full effectiveness upon the existence between teachers and supervisor of a common ground of agreement as to the essentials of the educational program. Such agreement may be reached by individual teachers and the supervisor through a trial and error process based on personal relationships.

This method is uncertain in outcomes and is time consuming. Agreement may be reached, as well, by means of orderly group consideration of the issues involved. This latter method may be carried forward in organized form with thoroughgoing analysis and study, and is distinctly superior in most respects to dependence on personal relationships. This latter procedure is a part of a comprehensive curriculum program. Thus, curriculum making, rightly conceived, is of importance to supervision because it provides teachers and supervisors a common ground of agreement from which to approach their work.

Curriculum making can render a further service to supervision because supervisory programs frequently tend to scatter efforts and to make the instructional program appear to be composed of a number of somewhat unrelated parts. For example, during one year work may be concentrated on remedial instruction in reading, the next year on units of work in social studies, the next year on non-promotion, and the next on aims of education. The tendency is to attack each problem as a separate, distinct phase of instruction.

Thus, desirable relationships between various aspects of instruction are not developed and teaching tends increasingly to become divided into separate compartments. A comprehensive curriculum program provides a complete, related view of the problems of instruction. Each phase of work is seen in relationship to the other phases. With such a basis, supervision can relate the specific problems more adequately to other phases of instruction. Steps in a supervisory program may be planned to grow logically out of preceding steps and to lead on other steps. Supervision may thus be provided with direction and coherence when based on a comprehensive curriculum program.

Supervision is further aided by curriculum making through the course of study that are developed in a curriculum program. A good course of study can materially increase a supervisor's effectiveness, and decrease the amount of direct assistance required by individual teachers. Its value lies in the availability to all teachers of such materials as a statement of the aims of education, an outline of the scope of work for the grade or subject, suggested lists of activities and references, and descriptions of good teaching procedures.

Obviously, it is more economical for a supervisor to refer a teacher for suggestions to a given teaching procedure or references in the course of study than it is to describe these materials in detail. If carefully prepared, the written materials provided in a course of study are usually more adequate than the oral directions.

When all these points are considered, it is apparent that supervision can be most effective when it is based on a comprehensive curriculum program. Since the effectiveness of supervision does depend to a considerable extent on a comprehensive curriculum program, supervisors should be specially trained to engage in curriculum work and should assume large responsibilities in curriculum development.

CURRICULUM DEVELOPMENT A CO-OPERATIVE ENTERPRISE

Curriculum development, then, is a co-operative enterprise. Teacher, research worker, subject matter specialist, psychologist, sociologist, philosopher, educator, administrator, and supervisor must all make contributions. Some make available basic materials, others provide for the synthesis of these materials, while others are concerned directly with the use of these materials in enriching and guiding the experiences of boys and girls. Efficient production at each of these points eventuates in a good curriculum. Deficiency at any point, either in quality of work or co-operation, results ultimately in a weakened curriculum. A common purpose binds this varied group of workers together.

ELEMENTS IN THE CURRICULUM

A curriculum program, we have seen, should assist teachers to guide boys and girls in fruitful experiences. Administratively, assistance may be rendered through the preparation of good courses of study and through the provision of opportunities for discussion, study, observation, and demonstration. Lines of attack in developing such sources of help are suggested by analyzing the elements of experience and their ways of reacting.

In undertaking such an analysis, however, it should be held clearly in mind that experience is not a thing or a state of being. It is not something objective that may be isolated and examined. Experience is a process; it is the living through of actual situations. This process of living through situations involves the reaction of a variety of elements.

The presence of these elements in different proportions and relationships determines the type and strength of the reaction or experience. It is possible through analysis to determine what these elements are and to examine evidences of each, but when they come into relationship and reaction takes place it becomes impossible to distinguish clearly one from the other, or to discover in the outcome the characteristics of the elements involved. The observable characteristics of the situation are a process and an outcome, different in character from any of the elements in the process.

Thus, the process of experiencing results in changes in an individual which are unities different from any of the elements which went to make up the experience. The situation is not unlike the action of physical elements. A number of physical elements, each with its own peculiar characteristics and qualities, when placed in given relationships react upon each other, resulting in the formation of a substance with characteristics and qualities unlike those of any of the elements involved.

Consequently, the elements of experience and the process of interaction suggest points at which the problem of curriculum development may be attacked. Following consideration of principles basic to curriculum development attention is turned to these points.

determine what these elements are and to examine evidence of each. But when they are in combination, and reaction takes place it becomes impossible to distinguish clearly one from the other, or to describe in its entirety the characteristics of the elements involved. The resultant characteristics of the reaction are a new [illegible] outcome, different in character from any of the elements in the process.

First, the process of experiencing, the ultimate changes in an individual which are quite different from any of the elements which went to make up the experience. The situation is not unlike the combination of physical elements, each with its own peculiar characteristics and qualities, when placed in given relationship with each other, resulting in the formation of a new one with characteristics and qualities different from any of those elements involved.

Consequently, as a method of experience and the process of integration suggest principles by which the problem of curriculum development may be attacked. In the following consideration of principles basic to curriculum development attention is turned to these points.

4

Roman and Medieval Curriculum Practices

The relationships assumed to exist between the various elements in an enterprise must be compatible if a consistent program is developed. Lacking such compatibility the action in developing the program frequently becomes diffuse and contradictory. This is especially true in a program of curriculum development because of the widely varied elements involved and the many ways in which the several aspects of the work may be carried forward. For this reason, many programs of curriculum development contain highly conflicting assumptions and procedures.

It has been common practice in curriculum programs to endeavor provide for consistency of action through a statement of principles to guide the work. Preparation of such statements is customarily looked upon as one of the first tasks in the development of a curriculum program. An analysis by David of thirty-four city courses of study shows that most of the curriculum organizations involved drew up such statements.

Similarly, a majority of recent state courses of study or bulletins for guiding curriculum workers contain statements of principles, point of view, or philosophy. Educational surveys, in dealing with curriculum problems, emphasize the importance of such statements. Survey reports frequently "present educational theories and offer suggestions for the practical application of basic educational principles to the construction of the curriculum."

Examination of courses of study, however, reveals inconsistencies within given curriculum programs which indicate that very frequently the process of developing statements of principles is an academic task which exerts little real influence on the procedures of curriculum development. It is the purpose of this chapter to suggest ways and means of faciliiating the effective use of principles in developing programs which possess consistency and unity.

DIVERSE PRACTICE IN STATEMNTS OF PRINCIPLES

Statements of principles presumed to guide the development of various curriculum programs differ most radically in form, content, and number of items included in the statements. This diversity suggests a lack of common agreement as to the function principles should serve and as to the form in which statements of principles are most suitable for use in guiding curriculum development.

It is the practice in some programs to define principles to be followed in each step of curriculum development. For example, principles are stated to guide development of the administrative organization, the statement of aims, the selection of subject matter and activities, and evaluation of outcomes. In such cases the number of so-called principles becomes very large.

Some times fifteen to twenty principles are stated as guides for a single phase of the work. For example, the following statement of principles was developed to serve as a guide in the statement of aims in a city program.

1. Self-activity is fundamental to learning.
2. While transfer of training may take place under certain

conditions, it is neither automatic nor inevitable.

3. There is no desirable "discipline" in doing what is merely difficult and distasteful.

4. Education serves both proximate and ultimate ends.

5. The universal interdependence of man is basic for education.

6. The welfare of society demands the optimal development of the indvividual.

7. Education represents an investment by society to promote the common welfare.

8. The school is only one of the educative agencies established by society, and the inveitable overlapping in duties and responsibilities necessitates mutual co-operation.

9. Schools serve two interests : those of the individual and those of society. Wherever the two come into conflict, those of society take precedence.

10. It is the duty of the school to adjust itself to social progress.

11. The school should endeavor to all a common integrating body of functional knowledge, of habits, of ideals, and of appreciation.

12. It is the duty of the school to adapt the means of education to the needs of the individual, whatever may be the mental, physical, moral, or environmental conditions.

13. The needs of the individual for two co-ordinate types of ability is recognized : unspecialized, to discharge common personal, domestic, and civic duties; specialized, to render expert service to society.

14. The fact of individual differences conditions the results that may be expected from the educative process.

15. Education includes teaching the individual to do better the desirable things of life that he would do anyhow.

16. Culture, as desirable outcome of education, consists in the all-round development of those capacities and ideals which make for human progress; it includes social service, many-sidedness, democracy, physical well-being, development of spiritual life, aesthetic appreciation, well-mannered expression, insight, force, and idealism; it is altruistic, dynamic, and creative.

In contrast to this type of procedure some programs list only a few principles to serve as fundamental or basic guides. A good example of this procedure is seen in the Los Angeles County schools. The heading for the section of the course of study dealing with principles is suggestive : "Some Principles of Teaching and of Learning." The material is presented in descriptive form. It includes this direct statement concerning principles :

> The three principles which we are attempting to stress are: first that *learnings never come singly*; that is, *acquisition of a skill or a knowledge is always accompanied by an attitude of mind* toward the thing which is being done; second, that *each experience provides a background for future experiences*, and an attitude of receptivity or non-receptivity for the new experience to come – an attitude of readiness, if you will; third, that *we learn as we associate old experiences and new experiences.* These things being true, it is incumbent upon the teacher to evaluate proposed enterprises or experiences with exceeding care.

Discussion of this statement is followed by a brief outline and statement under the heading, "Our Basic Philosophy of Education."

In addition to these forms in which long lists of formal statements are developed in outline to guide each phase of curriculum development and in which a few basic guides are presented in discussion form, a procedure is sometimes employed in which statements of principles are presumed to be evolved by the various committees as needed. The practice in the Denver program is perhaps the best illustration of this use of principles. The position is shown by the following statement.

> If certain principles of education are sound, it is not at all necessary to present them in a ready-made form to those who are about to go to work on the problem of curriculum making. If the entire program is based on the best available research, it may be taken as a certainty that those principles which are sound will tend to emerge.

An illustration of the type of statement evolved is provided by material from the junior high school mathematics committee. This committee stated certain principles to guide in the selection of subject matter, as follows :

> Each subject and each item in the subject must justify itself.
>
> Each year of the junior high school should give emphasis to the subject matter that is most valuable for the period of his work with little consideration for later courses.
>
> The content of each course must be selected to meet the social needs of the children.
>
> The course shall enable the child to compare mentally with a fair degree of accuracy quantities, sizes, distances, and forms.
>
> The idea of relationship or of the dependence of one quantity upon another should be emphasized throughout.

It is impossible to examine these diverse uses of principles without seriously questioning just what function principles should serve in curriculum development and in what form they are most useful. It would seem reasonable to presume that if principles are as important as they are generally held to be in curriculum development, practice would have at least some uniformity.

The fact is that, in general, inadequate critical consideration has been given to these issues by curriculum committees, and that the extreme diversity of practice is, in part, a result of this condition. Consequently, in projecting a curriculum program, it is highly necessary to give special consideration and study to these issues. It becomes evident upon brief study that the term itself is used in a variety of ways. Consequently, it is desirable first of all to consider the nature of a principle.

THE NATURE OF A PRINCIPLE

The term "principle" is used with a variety of meanings. At one extreme is a very narrow and restricted use of the term applied in its generic sense to indicate a primary truth or law. At the other extreme may be found statements, frequently called "guiding principles," that take the form of these, opinions, or rules. Either of these uses is acceptable in so far as the meaning of the word itself is concerned.

However, the two concepts perimt principles to hold distinctly different places in curriculum development, or for that matter, in the development of any type of undertaking.

The restricted use of the term is common practice in the sciences. That is, there is a tendency to consider a principle as an underlying generalization which has been substantiated by controlled observation and experimentation. The scientist proceeds from theories or hypotheses which partake of the nature of principles. His observations prove that his hypothesis is either correct or incorrect.

If he believes the results of his investigation to be conclusive, he restates his hypothesis in the form of a generalization which, if very widely applicable, is sometimes called a principle or law; such as, Boyleis Law, the law of gravitation, and the principle of Archimedes.

There are relatively few such :fundamental, generally applicable, and demonstrable truths as these. This is especially true in the fields of the social sciences with which education is primarily concerned. Nevertheless, experience, provides a basis for certain generalizations concerning social life which cause them to partake, in general at least, of the qualities of principles as used in the way the term is commonly employed in the exact sciences. Psychology has tended to adopt the scientific use of the term and thus provides certain principles or laws for use in education directly comparable to scientific principles.

The significance of social principles has been questioned frequently because of their lack of exactness and objectivity. However, the general concept of a principle has been somewhat modified in recent years in as much as the finality and exactness of the most basic principles in the exact sciences have been shown to be open to modification and question. New facts and relationships have geratly changed concepts of basic principles in the sciences in recent years, requiring, upon occasion, reorganization of whole schools of thought. Unfortunately for curriculum development, this influence has not been felt in psychology and has not modified as greatly the outlook in psychology as in the pure sciences according to Ragsdale, who states :

> There persists in psychology an attitude toward "laws" and "principles" which has disappeared from the natural sciences. In the natural sciences laws or principles are recognized as being the statement merely of *probabilities*, rather than of *absolute uniformities*. They are merely theories which fit a finite number of facts.

Even so, however, certain basic concepts must be assumed to be true in order to develop a science, and these concepts, although more readily subject to change than believed in the past, represent the principles of the science as the term is generally used.

Similarly, in education there are certain basic concepts, which are assumed to be true, upon which educational programs are developed. These basic concepts are of the nature of principles as referred to in science and may be so used with all appropriateness. This is, in fact, the way in which the term is frequently used in educational literature.

In contrast with the restricted concept of a principle, there is the concept that a principle is a specific rule of action. Used in this latter sense a principle may be an opinion or belief which gives specific direction to behavior. In educational literature, particularly in courses of study, the term is often used with even less restriction that is indicated by this definition. In fact, the term is frequently used to designate desirable ends to be achieved or procedures for achieving those ends. Often such "principles" might more appropriately be designated as theses used to justify a given course of action.

In some cases they might be more accuratly defined as criteria by which procedures or objectives are judged. In developing long lists of principles such as those mentioned previously the term is enmployed to mean specific rules for action. This accounts for the large number of statements and preparation of separate lists of principles for each step in curriculum development.

The difference between these concepts of principles may be illustrated by an example from the realm of the sciences. The air brake is a mechanical device the purpose of which is to reduce the speed of a train or trolley car. Principles might be set up for operating air brakes that would serve as specific rules of action. On the other hand, the air brake is based on fundamental and widely applicable principles, such as the principles of inertia and friction. In this case the air brake is merely looked upon as a mechanical means of achieving certain results in conformity with basic laws or principles.

While specific guides to serve as rules of action may be helpful in developing the details of an undertaking, it is the fundamental generalizations of wide applicability upon which these guides are based that give the undertaking consistency. Consequently, the type of principle which is of primary concern in curriculum development is the one which is fundamental and general, rather than derived and specific. To know *why* to do or not to do a thing insures more intelligent compliance with specific directions than otherwise is possible. Certainly, in the complicated process of curriculum development, an understanding of the basic principles involved is necessary for developing a unified program.

SOURCE OF PRINCIPLES

Statements of principles are often made in connection with curriculum programs in such a way as to suggest that there are principles peculiar to curriculum making just as there are principles of physics. This is not the case if principle is used to indicate a basic truth or generalization. Generalizations of wide applicability that are significant in curriculum development are derived from basic fields of study. Important principles are provided by the fields of biology, psychology, and sociology. It is to such fields, in the final analysis, that the curriculum worker must look for principles basic to curriculum development.

Assistance is provided in discovering what principles are applicable to curriculum development from two sources. In the first place, educational philosophy, upon the basis of the findings of such fields as the foregoing and observation and study of the nature of human experience, presents comprehensive, unified, and systematized points of view concerning education which set forth the basis principles upon which the points of view rest. These principles are generally applicable to curriculum development.

To illustrate, Rugg sums up the basic concepts of pragmatic instrumentalism as follows :

> *First* ; Human experience is unified and continuous ; there are no separate instincts ; ends and means, character and conduct, motive and act, will and deed—all are continuous ; hence all dualistic interpretations of experience are fallacious.
>
> *Second* : Knowing comes only through active response ; meaning arises only through reaction ; a concept is synonymous with corresponding operations.

Third : Knowing arises through testing consequences. This is Dewey's concept of "the experimental method of knowing" and the contemporary physicsts "operational" definition of thinking.

Fourth : Experience consists primarily in the adjustment and interaction of individuals ; both individuai and group understanding and behavior are the product of the social human invironment ; the social environment "consists of all the activities of any one of its members."

Fifth : Society is conceived as a democracy, built on the foregoing principles ; that is, on the experimental method of knowing, the unity and continuity of experience, "numerous and varied points of shared common interest."

Sixth : An educational system, also based on the foregoing concepts, which will give "individuals a personals interest in social relationships and control and the habits of mind which secure social changes without introducing disorder."

The principles given in the first four statements are of great significance in curriculum development.

Another illustration of the contribution philosophy makes to curriculum development by bringing to light fundamental principles is provided by Finney's emphasis on the implications of social life for education. He points out certain basic or fundamental principles upon which his point of view is based. The implications for curriculum development are most significant.

For example, he describes the principle of social parallelism as one of these basic concepts. This principle ıelates to the parallelism between a given civilization and the educational system that functions in it. He concludes that, "..........in civilized societies the curriculum normally corresponds to the culture."

This principle is of utmost significance in planing a program of curriculum development. It conditions materially the concept of the function of the school and source from which aims of education should be derived.

The second source of assistance in discovering principles of significance in curriculum development is educational literature as it deals generally with problems of instructional organization. Much of this literature shows the application of principles derived from the various fundamental fields to educational problems. For example, principles derived from consideration of the nature of society are illustrated by two principles stated by Inglis as follows :

1. The character and purpose of secondary education at any time and in any society must conform to the dominant ideals and to the form of social organization of the society.
2. The dynamic character of the social process requires the constant readjustment of secondary education to the changing demands of society.

Application of the priciple to various aspects of curriculum development will be found in a number of treatments of educational problems. Treatments of teaching methods and of principles of education contain much material that is suggestive of fundamental concepts.

In general, however, these sources require especially critical consideration in that the term principle is used in the non-restrictive sense. Psychology abounds in statements of priciples and laws, many of them, as proposed by various schools of psychology, being contradictory. Consequently, considerable difficulty is usually experienced in determining which ones are most acceptable for guiding curriculum development.

DEVELOPING STATEMENTS OF PRINCIPLES

Frequently in curriculum development the need for a unified point of view based on fundamental principles is not recognized. The statement of principles in such cases is done in a perfunctory manner and the principles do not function in giving the program consistency. In such cases, it becomes an important taks to make clear the need for such a statement.

This need can be felt only as the workers in the program become conscious of conflicts in procedures and of need for a fundamental basis upon which issues may be decided. Conflicts and needs for a fundamental basis upon which choices are to be made may be brought to attention by various means, all of which should be employed.

One of the most effective ways is to set forth issues that must be decided and to secure statements of position on these various issues. Inconsistencies and conflicts in such positions may be brought to light and a gradual process of reconciliation undertaking. This process may grow into development of a unified point of view and the setting forth of fundamental principles to serve in guidance of all phases of the work.

An illustration of the type of issue used in this procedure is supplied by the statements which follow. After a year of general study and cultivation of the teachers in a school system, these issues were presented to a select committee which was assigned the responsibility of preparing a statement of point of view and principles to submit to the entire group as a basis for guiding the various steps in the program.

The following issues must be faced vary soon in developing the curriculum program. The way in which they are decided will exert far-reaching influence on the program. The committee is requested to prepare statements of position in regard to each issue and a unified report indicating the basis of decision in order that the administration of the other phases of the program may be cosistent with the basic point of view.

1. Should steps be taken toward the development of an integrated educational program ? If so, what steps should be taken ?

2. Should steps be taken to give the educational program a fundamental social orientation ?

3. Should steps be taken to organic the educational program or a functional basis ?

4. Should steps be taken to elementary specialization from the elementary school and the high school and to make this a period of general education ?

5. Should provision be made for the psychological organization of subject matter rather than the logical organization of subject matter ?

FORM OF STATEMENTS OF PRINCIPLE

Statements which set forth the principals accepted as basic to development of the curriculum may be presented in a variety of forms. The most formal and probability the most frequently used type of statement is a list of principles briefly stated, This form is illustrated by the statement in the Alahama course of study :

Principles Relating to Society

1. Society is necessary for the full expresses of individual life.

2. The school is an agent of society.

3. The school is established for the purposes of society.

Principles Relating to the Individual

1. Learning results from activity.

2. Activities should be related to the passes experiences of the learner.

3. The aim of an activity should be accepted by the learner as the own.

4. The learner should experience satisfactorily from engaging in activities.

Mere listing of principles is varied somewhat in some cases by the presentation of brief discussions of each principle as it is listed. An illustration of this form of presentation is provided by the report of the Principles Committee in Virginia :

> Here are proposed the broad underlying principles agreed upon by the Principles Committee. These principles should be accepted by all committees as guides for their work.
>
> PRINCIPLES GOVERNING EDUCATIONAL AIMS AND PROCESSES
>
> **I. The school is an agency of society for its perpetuations and recreation.**
>
> A democratic society is a dynamic, stimulating, and co-operative agency created by individual and group action for discovering higher values and more effective ways of attaining them. It is not an end product to be perpetuated in static form through indoctrination of individuals with a fixed system of values.
>
> In function society has evolved many special institutions. Some are primarily protective, conservative, and regulatory, seeking so to control individual and collective behavior as to realize recognized values of the present. Other institutions are primarily creative in that their function is to promote developmental, evolutionary and growth process in individuals and the social body as a whole. The school has emerged in our society as its chief creative institution. In its processes the school should :
>
> 1. Discover and define the ideals of a democratic society.
>
> 2. Provide for the continuous re-definition and re-interpretation of the social ideas in light of economic, political and social changes.
>
> 3. Provide experiences for boys and girls which make possible their greatest contribution to the realization of the social ideals. From the social point of view this involves ;

a. The definition of understandings, attitudes, appreciations and automatic responses that are necessary for the realization of the social ideals.

b. The selection from the group culture of materials which will assist most effectively in the realization of the social ideals.

II. Growth processes in individuals and in society are resultants of continuing interaction between individuals and society.

Individuals are influenced by changing social groups. They must, on occasion, respond with adjustment to the social group ; with acceptance group ideals ; with adoption of approved ways of doing. On other occasions individuals can and do change and control social groups as they do the physical environment.

Profound social changes in ideals as a result of social interaction with individuals are easily seen when we consider such cases as, "Ye have heard it hath been said, an eye for an eye, and a tooth for a tooth ; but I say unto you, ...love your enemies." Profound social changes in ways of doing are seen in such cases as adoption of the telephone as a means of communication. Just as the present social enviroment in the United States forces an individual to specialization in occupation with its attendant profound influence on the whole life of the individual, so unique concepts and ways of doing by individuals produce the rapid and profound changes in the social order which are everywhere manifest,

Because such interaction is the law of individual and social evolution and growth, society is is concerned with individualizing individuals for the creation of new values and with socializing individuals with a view to the conservation and use of existing values.

III. Individuals differ in interests: abilities, attitudes, appreciations and understandings, habits and skils, and in capacity to learn.

Since individuals are born with very different endowments they develop at vary different rates. In adult life inividuals will live on very different levels of intellect, character and skill. The school then must provide differentiated education for a variety of capacities and needs.

IV. Growth is continuous

Education must be a continuous development produced by progressive reorganization of experiences on increasingly higher and more complex levels :

1. The school system should be a series of intimately connected links without a break.

2. There should be a smooth and natural issue from the school into the life of society.

The value of school education is determined by the extent to which it creates a desire for continued growth and supplies the means whereby it may be realized.

V. All learning comes through experience

Mere activity does not constitute experience. Experience is both trying or doing and undergoing. When we experience something we act upon it, then we undergo the consequences. Experience as trying or doing involves change, but change is meaningless transition unless it is consciously connected with the resultant consequences,

It is only when an activity is continued into the undergoing of experience that the activity has significance for the learner. "It is not experience when a child merely sticks his finger into a flame, it is experience when the movement is connected with the pain which he undergoes in consequence. Being burned is a mere physical change, like the burning of a stick of wood if it is not perceived as a consequence of some other action" (John Dewey, 'Democracy and Education).'

When we have had an experience we gain something which may be carried over to enable us to foresee what is likely to happen next, and to gain ability to adjust ourselves to what is coming.

VI. An individual tends to avoid experiences which annoy and to seek experiences which satisfy

From the very beginning of life an individual gives evidence of set of desires and aversions which lead him to seek certain experiences and to avoid others. All of the senses respond pleasurably to certain stimuli and unpleasantly to others. A baby with the most limited control over his environment endeavors to satisfy his desires and to avoid his aversions. As rapidly as an individual's control over his enviroment increases, his efforts are extended to meet stimuli which satisfy his desires and to avoid those which involve his aversions.

This has great significance for teachers. It assures us that the teacher who associates school work with punishment is teaching the child to avoid further experiences of that kind. It gives us an understanding of how teachers who have used the memorization of poetry to punish children have developed a through going dislike for poetry.

In brief, from this principle may be discovered the reason that many things which children are taught to do in school are not continued when school days are over.

Sometimes this principal is interpreted to mean that only easy things will be undertaken in school. This is an unsound conclusion, for very often the highest degree of satisfaction is realized from achieving an extremely difficult task. Observance of this principle in teaching leads almost always to more intensive, intelligent activity on the part of pupils.

Another from of presentation is to state an educational creed. In this case a position is taken in regard to fundamental issues. The principles upon which the position rests are not stated formally, but are employed in the preparation of the statement of belief to give it consistency. An illustration of this form of statement is provided by the Ann Arbor, Michigan, course of study in social studies ;

Our Education Creed

We believe :

That Education is living.

That living implies growing.

That growing means the continuous re-creation of the individual through experience.

That the method of education is experiencing.

That experience which is ecduative in the best sense of the word produces each stage of life a more completely integrated personality.

That the end of education is found is the present as well as in the future.

We believe :

That the School is society's agency for furnishing a selected environment in which directed growth during certain periods of life may more effectively take place.

That this environment should stimulate the child to grow through experiences which have a high degree of personal worth.

That through these intrinsically worth-while experiences the child should grow in his power to interpret the physical world and the society in which he lives.

That the experiences which the school furnishes should make possible active participation in grow life on increasingly higher levels by giving opportunities for the practice of those habits and attitudes which are necessary for physical and mental health and for wholesome group life.

That the school is only one of many agencies for developing character and personality and should co-ordinate its program with that of the home and other agencies of society.

We believe :

That the Elementary School should be concerned with stimulating growth in personality by providing in the main, opportunities for experiences which are basic race experiences. That through these experiences the child should grow in his power to understand the similar facts of the physical world around him and the more elementary basic problems of the group life in which he finds himself.

That through these experiences the child should gain dynamic control over the skills and information which are the necessary tools in meeting the common deeds of life.

That it should provide for the practice of the desirable personal and serial habits which are being built in the home and should in addition provide for the beginning of other habits of a positive social type.

We believe :

That the Curriculum should be organized in terms of experiences.

That these experiences integrate subject-matter and eleminate sharply drawn distinctions between the conventional school subjects.

That such a curriculum is based upon the assumption that subjects of study, as organized bodies of information, should be the end point and not the beginning of an educative experience.

That within certain limits teachers and puplis should be given a large degree of freedom in choosing and organizing the particular unit experiences which they will enter into in any grade.

That these experiences should be so chosen and arranged that participation in life on increasingly higher levels of achievement is possible.

We believe:

That while such a curriculum is highly desirable, it is hardly expedient at the present time for the public schools to depart entirely from the generally accepted school organization.

That it is both desirable and expedient in the Elementary School to bring into closer relationship the materials of history, geography, and industrial arts through the organization of a unified course in the social studies.

We believe :

That an Integrated Course in the Social Studies in the Elementary School will further the aim of education.

That it will bring about a freer, more flexible organization of the Elementary School.

That it will furnish a core of rich life-experiences which will make meaningful many of the other school activities.

That it will make possible a more significant and unified interpretation of the problems of social life which the child meets from day to day.

That it will make more probable an intense and a lasting learning of many of the skills and facts which are considered tools for the successful solution of individual and group problems.

That it will give greater opportunity for the growth in the child of power to think independently and for mastery of the technique of problem solution.

That it will give greater opportunity for the development of individual.

Statements may also be presented as a point of view or platform. In this form a discussion is presented which involves a somewhat systematic consideration of the various aspects of education with which curriculum development is concerned. The principles upon which this point of view is based are either woven into the discussion or deduced at the conclusion of the discussion. An illustration of this type of statement is provided by the Los Angeles County course of study for the inter-mediate grades :

SOME PRINCIPLES OF TEACHING AND OF LEARNING

Eddcation, or growth, is conditioned by that inner thing which we are, and by those outer environmental experiences whish tend to modify it. It is with these modifications that the schools are concerned.

After all, we must take each individual as we find him, with whatever abilities and tendencies he has, and strive to develop these abilities or modify these tendencies in such a way that he will be an acceptable, contributing member of a social group. About the only think we can hope to do, since individual instruction in public schools practically impossible, is to provide an environment and a succession of worth-while experiences which will help children progressively to improve their behaviour, and which will them to acquire the knowledges and skills which we feel they must have.

We must remember that the school is only one factor in education is the thing we say it is, and that the experiences which children have in schools should help them to engage in more desirable and more meaningful experiences outside of schools.

Education is a continuous succession of one experience after another which make and remake our ways of thinking, of feeling, or acting. Each new experience contributes something to the process. In other words, learning proceeds through a gradual accommodation of assimilated experiences, by which we interpret, or think we interpret, life about us.

We learn as we associate new experiences and old experiences, and the greater the intensity or vividness of the experience the greater its effect upon us. "The royal road to learning," says the California Curriculum Commission, "is through these four stages of a typical life experiences ; purposing, planning, executing, evaluating. No step can be omitted, and the child must take each step himself actively. No one, not even the teacher, can short-circuit the process for him. The teacher may guide at each step, but the learner must experience.

The work of the teacher can be completely summarized in two aims : to help children set up ever more worthy purposes, and to help them to achieve those better purposes in more desirable ways."

Experiences naturally will vary in kind, in vividness, in effect, in value. We may have the experience of driving an automobile in the rain on slippery streets, of shopping in a Christmas runs, of having a molar extracted, of learning to use decimal fractions, of balancing a bank account, of writing a letter, of meeting an artist, of travelling broad, of threading a needle, and what not. We have little experiences, and big experience.

We repeat that they vary in kind, in vividness, and in effect. Each meaningful experience, however, aside from whatever specific knowledge or skill it may provide, ether changes our attitude or strengthens the feeling we have already built toward the think is brought to our consciousness.

For example, a new experience develops or strengthens certain feelings which we have, let us say, concerning driving in the rain—not only the technique of driving in the rain, but the attitude of pleasure or fear which comes from the activity. A new experience with a painful molar develops or strengthens certain feelings which we already have, perhaps, concerning teeth and toothbrushes, dentists and pain. Each new experience in reading has some effect on our attitudes towards reading. And so on.

You will recall that the laws of learning are *radiness exercise*, and *effect*. We cannot begin to give you even elementary comments on psychology and the principles of learning. All of you have had courses in psychology and numbers of courses in education.

We shall only try to recall to your attention in native fashion certain things which are usually touched in scientific language. *The first law of learning*, you remember, is that of mind-set, or readiness of the learner, which only means, after all, that the learner should have had experiences which have caused a favourable attitude toward the new experience or an eagerness for it, which will make him wish to engage wholeheartedly in its pursuit.

The greater the readiness, the less stimulation will be needed. Interest is favourable mindest and, in general, we can say the stronger the interest on the part of the learner the greater his effort. We have emphasized all through the courses of study the necessity of first of all creating an eagerness on the part of children for experinces before proceeding with the experience.

The second law of learning is that of exercise, which, in simple terms, means something like this : we tend to remember things we are use and to forget things which we not use. We tend, also, to recall things which have been satisfying or pleasant to us and to forget, or to try to forget, experiences which have been unpleasant. Abilities to use tools and techniques are developed by exercise – repetition, drill, experiences of recurring frequency, whatever you wish to call them, knowledges are fixed by use. Habits are formed by use.

Habits may be either good or bad. The more fixed by use is a knowledge or a habit, or a skill, the more difficult it is to change. In planning experiences with your children, be sure that the facts or skills which you endeavor to establish, sometimes with difficulty, are useful ones, which will not be promptly forgotten because of disuse. Avoid a waste of enrgy and concentrate on helping the learner establish the things which are sufficiently worth while to merit establishing. Let your emphasis be doing this well.

The last law of learning is that of effect ; that of satisfaction or annoyance. We tend to repeat experiences which give us satisfaction ; to avoid those which give us annoyance. Do you see the tremendous significance in providing the child with experiences whose outcomes are satisfying, if you would help him to grow normally and keep him eager for further enterprises ? You will find excellent discussions of this deep subject which we have touched so lightly in Thorndike's *Psychology of Learning* and in Kilpatrick's similar discussion in his *Foundations of Method*. We believe you will enjoy reading *Psychology Teachers*, by Collings and Wilson, a very recent book.

Do you remember the characteristics of learning which are considered secondary in importance to the laws of learning : multiple response to the same external reaction (varied response), attitude adjustment (determination of the learner), assimilation or analogy, and associative shifting ? Kilpatrick's famous four steps in learning ; purposing, planning, executing, evaluating ?

Our Basic Philosophy of Education

The basic philosohpy as expressed in the prescribed courses of study for all grades may be summed up somewhat in this fashion :

(1) The efforts of the teacher shall be directed toward providing the learner with rich and varied experience, appropriate to his individual needs, present and future.

(2) These experiences shall be chosen to the end that the child shall show progressive improvement (growth) in his ability to attain personal and social excellence as he learns.

(*a*) To adjust to a changing world, and

(*b*) To control its forces.

(3) We believe that this growth must be accomplished by means of a mastery of those procedures which the race has found to be indispensable.

These include :

(*a*) The fundamental manual and mental skills, such as speaking, writing, computing ;

(*b*) Basic vocational skills, such as the use of common tools appropriate to the learner's sex, interest, and ability ;

(*c*) Such avocational skills as the learner can master in the fields of the crafts and in the fine arts ;

(*d*) A knowledge of the world and its life, past and present, with reference to the future ;

(*e*) The establishment by each learner of a body of socially desirable habits and attitudes ;

(*f*) The appreciation of the best thought, action, and material creation which have been preserved in the world.

All these experiences and attainments shall be a part of our deliberate and planned cultivation of the good life for each learner.

> We believe that the transitional outcome of the educational process as outlined shall be the learner's developing abilities to make worthy contributions to the higher social values, as he becomes an increasingly co-operative member of a stable and happy community life. The ultimate outcome shall be the ability of our whole people as individuals and as a nation to live in a spirit of sympathic international understanding, permitting each national group to preserve and develop its racial spirit, and encouraging each such group to make a worthy contribution to world life.

There is still another form of statement which differs considerably in method of development from the other forms. Whereas the other forms serve specifically in directing curriculum work, this last form is a comprehensive and systematic statement of point of view to guide development of all phases of an educational program.

It is developed by some group within a school system concerned with all aspects of the educational program. Such a statement, when developed in a comprehensive, consistent, and systematic form may appropriately be referred to as a philosophy of education to direct development of an educational program. From such a statement guidance may be derived to decide the issues in a consistent manner which arise in curriculum development. Such a statement was prepared by the Teacher Training Council of Wisconsin. It is presented here for illustration :

> This philosophy is offered with the sincere conviction that it points the way to necessary readjustments in educational emphases. Despite tumultuous challenges hurled at education and the conflict on objectives, we have tried to set forth purposes and means whereby the school can become more potent in modren life.
>
> The entrie statement has been submitted to various professional groups for review and many suggestions received have been incorporated. The general approval given by educators of Wisconsin and other states encourages us to hope for its influence upon our schools. Translation of the philosophy into school practice is obviously out of the hands of the Council. It is hoped, therefore, that teachers will take a few points which appeal to them and develop techniques by which they may be carried out. Adoption of the entire program by one teacher or school for experimental purposes, would, in our opinion, be unwise.
>
> Your committee will appreciate reports from teachers upon any classroom methods developed upon the basis of this philosophy.
>
> —*Teacher Training Council*

EDUCATIONAL OBJECTIVES

The character of any educational system is determined by its objectives. The most acceptable idea underlying educational objectives is the growth of the individual so that he will act as wisely as possible in the social groups of which he is or may become a member. Acting wisely in this connection is to be interpreted as acting in such a way that he will make the greatest possible contribution to society and at the same time receive the greatest possible personal satisfaction. These two ends are not regarded as essentially in conflict.

DEMOCRACY

The essential idea in democracy is that of respect for personality—the consideration of people as persons and not as things. If we are to develop in America a democratic society, the school cannot escape partial responsibility.

All the relations of the school must conform to this principle in practice as well as in theory. The idea of growth through critical thinking fits in with democracy since it conditions human action upon wise self-expression. The teacher-dominated school does not allow for the freedom necessary for growth through self-expression in a typically social environment. The teacher should make every effort to make the pupils responsible to social forces within and without the social rather than center reponsibility in himself.

The traditional school is a teacher-dominated autocracy rather than a democracy. The teacher or some force still further removed from the learner sets the tasks, the standards of learning and conduct, and the teacher appropriates all judicial and executive authority. By the term democratic school is not meant that the school should be administrated by the pupils without due respect for society and its institutions, but the school set-up should be such that the pupils can assume all responsibility consistent with other social interests that are in any way connected with the school, and respect for these interests should be recognized through reason and understanding rather than through authoritative control.

Only beginnings have been made in the reorganization of the traditional autocratic school to make it more democratic. These are found chiefly in the modern kindergarten and primary grades. We should not preach democracy and continue to practice its opposite in our educational institutions.

INDIVIDUAL DIFFERENCES

There is a wide range of difference in the rates at which individuals develop, intellectually and emotionally. For the same individual also, the rate of growth is neither constant in any one line nor uniform in different lines of educational endeavor. Since an individual develops best when his environment tends neither to accelerate nor to retard his growth beyond the present limits of his native capacity, constant vigilance must be exercised by the teacher in the adjustment of the pupil's educational surroundings. The purpose of differentiating the curriculum is to provide for different child interests and not for different levels of ability. Provision should be made in each curriculum for different ability levels.

THE ATTITUDE OF INQUIRY

One of the basic principles involved in the growth of the human mind is that of critical inquiry. This means open-mindedness, toleration of others' views, deferring judgment, and a willingness to alter beliefs in the light of new evidence. School procedures should be controlled by this scientific attitude. In cases where the evidence is sufficiently conclusive to warrant independent action, educational practice should stimulate the individual to act according to his convictions even though they may run counter to tradition or to usually accepted social practice. Present practice, however, should be accepted as the guide until there is a reasonable doubt established as to its superiority to the proposed change. The teacher's attitude, therefore, should be that of inquiry, of problem-solving, rather than that of ready acceptance or of uncritical rejection of new ideas.

CONTROVERISIAL QUESTIONS

The principle of free inquiry is often in conflict with the personal interests and opinions of individuals and groups. The problem of how far the school can go in the study and discussion of controversial questions is a difficult one. Personal beliefs must be respected but on the other hand we can only find the best solution of our most difficult political, social, and economic problems through both intensive and extensive study and discussion of them. Partisanship has no place in the school but opportunity for free inquiry must be protected.

INTERESTS AS EDUCATIONAL OBJECTIVES

The principle of growth emphasizes the present life of the child rather than preparation for adulthood. Both the direction and rate of the pupil's growth are closely related to the present interests. These act both as cause and as effect. Habits are not consciously formed except on the basis of desire and interest. The school can scarcely serve the child better than by helping him to acquire an assortment of interests which are in line with his native capacities. These interests should multiply and strengthen his social relations as well as his personal satisfactions. They represent, therefore, the basis of his moral life and they furnish the drive that carries him through difficulties the realization of his desires.

SOME ESSENTIAL FACTORS OF LEARNING

Interest, satisfaction, and success are closely related factors of learning. The motive power of self-directed activity is purpose and interest. When activity is successful, that is, when conscious progress is being made toward a goal, the activity is accompanied by interest and followed by satisfaction. The driving power of purpose, the stimulation of interest, and the satisfaction resulting from successful effort are essential factors of learning. Attitudes are, therefore, all important in education. It has been demonstrated that learning takes place mare rapidly when the learner knows how well he is succeeding.

It is evident from the preceding statement that only beginnings in learning can be forced from without. Purposes which are self-initiated or freely approriated create true learning situations. Coercion may and often does produce an attitude of opposition. One of the chief defects of the traditional school is its emphasis on coercion rather than on purpose. Unless outward compulsion is soon replaced by the inner drive of purpose, learning is thwarted and opposing attitudes are developed. These are cardinal principles of the Wisconsin Philosophy of Education.

SELF-DIRECTION NECESSARY IN LEARNING

Artificial or external stimuli may and often do set up the goals and methods of approach, but no critical learning takes place until the individual has accepted the goal as his own and his interest in reaching the goal is constantly stimulated by an uderstanding of his progress toward the goal. Outside forces may stimulate inside forces to action, but critical learning takes place only in so far as the inside forces become self-directing in their interplay with outside forces in the quest for the objective.

Though artificial stimuli, or stimuli not inherent in the goal or the progress toward the goal, may be accepted in a critical educational set-up, the inherent danger in the abuse of these stimuli is so great that extreme care must be exercised to limit their use, especially coercive stimuli, to individual cases where a careful analysis indicates that such stimuli are necessary to obtain a critical educational set up. Since the method of problem attack is the dominant objective, no educational process can-be justified under the above philosophy where the coercive elements are consistently dominant, or where coercion is used when the objective can be obtained through critical practice. Under this philosophy, an educational set-up must be judged solely from the amount of self-directed activity it stimulates in the contemplation of worth-while problems.

GROWTH AND "THE CHILD-CENTERED SCHOOL"

The philosophy of growth is consistent with the child-centered school if by that term is meant educating the child so to understand his social and natural environment as to make it possible for him to get the highest degree of satisfaction out of his social relations. It is not consistent with the child-centered school if such a school means developing an individual so that he receives satisfaction only when he can make everything in his environment yield to his own desires no matter how unsocial these may be.

It is consistent with the society-centered school if this means that the individual is to be brought to understand his relations with his environment in such a way that he lives most fully as an individual when he is living most completely for society. It is not in agreement with the society-centered school if it means to develop in the child a blind indoctrinated slavish adherence to the accepted social customs irrespective of his individual well being.

The characteristics of a child-centered school as conceived in this philosophy are freedom, initiative, activity, interest, and self-expression for every pupil. These qualities are in contrast with those of the traditional teacher-centered school. These new ideas and ideals for the school have grown out of the new educational philosophy and psychology here advocated and are in harmony with them. They have already revolutionized practice in the kindergarten and primary grades and have modified the administration of university graduate schools. It is of the greatest importance that every teacher should study the advantages of the child-centered school as well as its dangers.

EDUCATION AS ADJUSTMENT

Adjustment is regarded by many educators as the chief aim of education. The institutions of society become the dominant educational objectives rather than individual freedom. There is direct opposition between the ideas of education as adjustment and education as growth through problem-solving. The character of instruction and of the curriculum under one of these aims differs widely from that under the other. The nature of these two concepts is such, however, that they represent the opposite ends of a scale along which human relations move, sometimes approaching one extreme and sometimes the other. The school must continually seek the most satisfactory solution of this age-old problem of individual freedom versus institutional control, the relation of the wolf to the pack, and must fashion its organization and instruction accordingly.

THE PROBLEM OF DRILL

The educational principles here accepted imply that a large part of education consist of problem-solving activities. There is also in the curriculum, however, a considerable amount of skills, habits and informational data useful as tools and means rather than as ends in them-selves.

In general these tools and skills are best acquired incidentally in connection with their use in reaching some end desired by the pupil rather than by formal drill apart from such use. The difficulty in the latter procedure is to secure, when needed, the transfer or application desired. Common experience indicates, however, that for the sake of economy of time and without too great a violation of the principle of interest, these tools and skills may possibly be taught through formal drill.

Such a course is justified only when suitable follow-up tests in dicate that the power to use the tool in a new problematic situation has actually been achieved.

TRANSFER OF TRAINING

The nature and possible extent of transfer together with the conditions under which it may be secured must be carefully considered in formulating an educational program. The solution of this problem belongs to psychology which up to the present time has given only a partial answer. It is generally agreed among psychologists, however, (1) that transfer is possible, but not automatic ; (2) that the amount of transfer depends on the intelligence of the child, the nature of the learning experience, and the technique of the teacher. This statement throws a tremendous responsibility on the teacher and her helpers who must now determine where expected transfer is lacking and how it may be achieved.

THE SCHOOL AS ONE EDUCATIONAL AGENCY AMONG MANY

The public school is but one of the educational institutions of society. Its functions are limited by its nature and its organization. Constant study should be made to determine what can and should be taught in the school, and what cannot. Much of the present failure ascribed to the school is probably due to the fact that is attempting to secure educational outcomes beyond its power to teach. The school cannot compete, but must fully co-operate with the other educational agencies of the community.

These limitations necessitate a careful selection of the educational factors to be emphasized in the school. Only a limited part of a child's educations is directly or indirectly the result of formal school education.

The great school of life of which the formal school is only a factor is responsible for the child's education. The school should not try to assume the responsibility for all phases of child education, but that part of it which is vital, transferable, and is not furnished in the desirable degree by any other agency. For instance, the school, on account of the above limitations, can at best be a small factor in the health education of the child. In this education it is limited to assisting rather than taking the lead.

On the other hand, in the case of beginning reading, the school must accept leadership because society has no other educational force that will accomplish this very desirable part of the child's education. An analysis of the school's function in the general educational objectives is necessary to selection of the subject matter and activities in an effective program of school education.

The particular form of statement that may be employed with greatest advantage depends somewhat upon the particular situation for which the statement is being prepared. In general, however, the value of the various forms is in inverse order from that given in the foregoing discussion. Mere listing of principles is of very doubtful value. In such cases they very possibly exert influence on development of the curriculum through the guidance of certain individuals, but there is little help provided by such a statement for other individuals who may have a limited outlook.

The addition of paragraphs of discussion helps somewhat but still leaves the average curriculum worker pretty much at sea. The statement of creed is a definite advance and undoubtedly has a great deal more significance to most crrriculum workers than the foregoing forms. Statement in the form of a unified point of view appears still better, in that systematic organization is required and the principles upon which the point of view rests may be indicated. The last form mentioned is highly desirable in that it presumes direction and organization of all aspects of the educational program according to the same basic point of view.

CONSTANT REVISION NECESSARY

Whatever form of statement is employed it will be found necessary to revise it constantly. As the program progresses insight will deepen and inconsistencies will arise not anticipated at the beginning. Consequently, provision should be made for the development initially of a statement which will make operative a consistent point of view based on sound principles and for the continuous development of this statement as experience indicates a need.

When this procedure is followed a sense of unity and direction is injected into a program of curriculum making which is lacking when guiding principles are not considered or when they are stated in academic terms. At the same time, growth in concept and interpretation is required by the process of constant revision to which the statement must be subjected if it is to prove effective.

5

Curricula of Early Modern Times

The way in which the aims of the educational system should operate in connection with the educative process is at present a matter of considerable uncertainty. The reason for this situation may be seen from a brief review of the development of procedures for stating and using aims and from consideration of certain recent developments in educational theory.

Students of social progress and development in all ages have given consideration to the aims that education should achieve. Plato set forth a general aim of education in the exposition of his concept of an ideal society in *The Republic*. He held that education should fashion the life of the individual in an all-round manner and "give to the body and to the soul all the beauty and all perfection of which they are capable."

Other outstanding scholars in turn stated aims for education. Those stated by Aristotle, Comenius, Locke, Rousseau, Pestalozzi, Herbart, and Spencer, are frequently quoted. All of these statements have one common characteristic. They are very general in nature. What they may mean when employed for developing an educational program is subject to widely varied interpretations.

During modern times statements of the aims for education have continued to be made. Philosophers, psychologist, administrators, and teachers have participated in this activity, both individually and through committees. For a time the statements continued to be of a highly generalized nature. Expressions such as "good citizenship," "ethical character," and "maximum child growth," found a prominent place in the statements. Such expressions provided a basis for philosophical discussion and served as a means of arriving at agreements, but when the problem was faced as to how the statements could be made operative in directing the learning process difficulty was encountered. What is ethical character and how can it be used as an aim to guide in selecting content and activities ?

How will the aim of maximum growth help a given teacher to organize his instruction ? Questions of this type were asked. As a result, general statements of aims came into disfavor and a demand was made for an organization and statement that would exert real influence on the development of the instructional program. This would be achieved, it was held, when aims were so stated and arranged that they could actually be used by classroom teachers to direct day-by-day instruction. This criticism is illustrated by a statement from Monroe. In speaking of general statements of aims, he says :

> Certain difficulties become apparent when one attempts to apply such formulations of educational objectives in devising and selecting learning exercises. Phrases such as "ethical character," "health," "right habits of conduct," "appreciations," "life activities," and "citizenship" do not express concepts that the high-school teacher is able to apply directly in deciding what learning exercises he should ask his students to do. In so far as such "high-sounding terms" have meaning, they describe the conduct of "educated" persons rather than the particular abilities or controls of conduct they possess. Hence "character," "culture," "social efficiency," "a well-disciplined mind,"

and the like refer to ultimate and general educational objectives rather than the immediate goals to be attained by students in first-year algebra, civics, Latin, home economics, English literature, etc.

Since this criticism of general statements of aims was pronounced at the time that the scientific method in education was receiving great emphasis, it is not surprising that curriculum workers, who must face the practical problem of preparing statements of aims for use, turned to the method of analysis to meet the difficulty.

For a period, detailed analyses of aims were made. Step by step the supposed component parts of general aims were analyzed into specifics, until the statements were such that the aim would dictate the instruction required. These analyses usually took the form of lists of specific abilities to be developed. Such lists could be used to direct in considerable detail the organization of instruction. For example, the ability to count from one to ten, the ability to wash the teeth, the ability to spell given words, and so forth, could control the selection of learning activities of pupils and the selection of content.

Extended studies were made to determine comprehensive lists of abilities and activities that function in life. These were employed by curriculum committees to assist them in setting up long lists of aims to be achieved by school divisions, grades, and sometimes by month and week within grades.

This is the procedure which has been most generally accepted in curriculum making during the past decade. It has in fact been accepted by curriculum committees almost as a truism that the procedure for curriculum making is selection of aims and organization of instruction to achieve them. In this way aims have been looked upon as the primary criterion by which to evaluate all succeeding steps in curriculum making.

However, certain developments have occurred which lay open to grave question this process of analysis and the function assumed by it for aims. The result, as pointed out in the beginning, is great uncertainty as to just what part aims should play in directing instruction and, consequently, in curriculum making. For the most part, curriculum committees are adopting what may be described as a compromise position.

They are departing from the detailed processes of defining aims characteristic of many programs of the past decade, yet they continue to state aims in some form for many parts or phases of the instructional program. In some cases the conclusion has been reached that aims, other than a few general statements, have no place in curriculum making, and thus aims are again assuming their original position, the position held before the scientific movement in education had exerted influence upon them.

TERMINOLOGY

Analytical procedures for developing statements of aims led to the use of certain terms in specialized ways. Some of these terms must be employed in discussing the problems which are treated in this chapter. Consequently, before proceeding further, we shall consider the meanings of these terms and the way they are used in this discussion.

Three classifications of aims have received rather wide use : in the first case, aims are distinguished from objectives ; in the second case, a distinction is made between ultimate and immediate objectives ; and, in the third case, the classification is in terms of general and specific objectives.

All of these classifications represent efforts to distinguish between inclusive statements from which analysis starts, and derived particularized statements which serve to direct individual phases of instruction.

Hopkins draws a distinction between aims and objectives. This distinction is based on scope and time. According to his definition, the ends striven for in education in general and in given subjects for particular grades are aims, whereas the ends defined within the grade for time units less than the year or semester are objects. Thus, reference is made to the aims of a subject and the objectives of an instructional unit.

The distinction between ultimate and immediate objectives is essentially the same as the distinction made by Hopkins between aims and objectives. An ultimate objective is held to be a generalized statement. It does not indicate specifically what activities pupils should engage in or what content should be used. The immediate objectve, on the other hand, does. It provides the teacher immediate goals to be reached and aroud which instruction can be directly organized.

The distinction between general objectives and specific objectives is not drawn as clearly as in the other classifications. Usually general objectives are held to be those which are stated for education in general, for a school division, or for a subject in general ; while specific objectives are those which are stated for given grades or parts of grades. Thus, according to these classifications, aim, ultimate objective, and general objective refer to highly generalized statements of aims ; while objective, immediate objective, and specific objective, refer to particularized statements.

As a matter of fact, all of these distinctions are based on the relationship of statements of aims or objectives on one level of analysis to those on other levels. That is, some statements as compared with other statements, are more or less general in nature. There is, consequently, nothing absolute about any of the terms. Arbitrary definition is the basis upon which they all rest and consequently one may be as acceptable as another if the meanings assigned the terms are clear and mutually understood.

In so far as the treatment in this book is concerned, no distinction will be made between aims and objectives, and therefore the two terms will be used synonymously. This is based on experience which shows that teachers and curriculum workers are unduly confused by use of the terms with different meanings, and are apt to seek and to expect a distinction between the two which is more significant than any that can be made.

The terms *ultimate* and *immediate* will be avoided because of certain unfortunate implications of the terms for instructional organization, as is pointed out in a later section of the chapter. The terms *general* and *specific* will be employed occasionally. They will be used entirely in a relative manner, however. That is, the more inclusive statements of aims will be referred to as the general aims of education, whereas all statements resulting from analysis of these general statements will be referred to as specific aims.

When reference is made to the aims on a particular level, the level referred to will be specified definitely, *e.g.*, subject aims and grade aims. In this way it should be clear to what aims reference is made at any time.

DIFFICULTIES ENCOUNTERED IN ANALYTICAL PROCEDURES

Four especially noticeable difficulties have been encounterded in employing analytical procedures in dealing with aims. Dictation of the instructional program by specific aims assumes that in and of themselves specific aims provide an adequate basis for selecting pupil activities and subject matter.

In other words, it is held that the steps of analysis from the most general statement of aims to the most specific are necessarily sequential, that each step paves the way for the next, making the specific aims the more or less inevitable outcome of the general aim or aims. The work of curriculum committees based on this procedure shows that this is not a sound assumption.

There is always a point, as an analysis proceeds, when arbitrary decisions must be made; a step is reached which does not necessarily grow out of preceding ones. This point is marked by the injection of subject matter into the aim.

Whenever this point is reached it will be noted that the tendency is to insert into the statement of aims what has customarily been taught. The result is that the long process of analysis usually leads to the curriculum organization and subject matter sanctioned by tradition. The procedure fails, as a rule, either to cause old materials to be eliminated from the curriculum or new ones to be added, and it fails also to influence significantly the organization of materials.

This is a shortcoming of gereat significance. The one thing that the procedure does accomplish is to call the attention of teachers to aims that may be realized through the materials they ordinarily teach. It has essentially the same effect as if teachers were to start with the subject matter they customarily teach and seek the aims that should be realized through it.

A realistic picture of the procedure in most cases would probably show certain general committees analyzing aims to the point where subject matter is required to make them sufficiently specific to direct instruction. At this point the assistance of committees in various subjects is enlisted. They take the statements of aims prepared by the general committees and find those which can be used to justify the content which they believe should be taught. These then become the specific aims.

By tending in this way to direct the attention of teachers to what should be realized through the snbject matter that is customarily taught, this procedure performs valuable service. However, it must be recognised, as pointed out in the preceding chapters, that the demands are so great on education at the present time that new curriculum organization and new subject matter must be introduced in many cases.

This need is not met by the analysis procedure described. As a means of achieving fundamental and thoroughgoing revision of the curriculum, it is largely useless because of the tendency to perpetuate the subject matter that is being taught adequate appraisal of its value of the method of organization.

Charters pointed out this shortcoming during the period that the procedure was being developed. He stated in 1923 :

> While writes on the curriculum have begun with the statement of aim, none has been able to derive a curriculum logically from his statement of aim. In every case he has made an arbitrary mental leap from the *aim* to the *subject matter*, without providing us with adequate prinples such as would bridge the gap—without presenting steps which irresistibly lead us from aim to selection of material. This may seem to be a sweeping statement, but a few illustrations will demonstrate its accuracy.

A second difficulty became evident from observation that children might achieve the specific aims and still not achieve the general aims. In fact, it was observed that this was a common rather than an uncommon occurrence. For example, children might achieve the specific aims defined for English—reading the selections indicated, matering the facts and skills required and come out of the experience without the love or appreciation for good literature which was the general aim.

Thus, it became clear from practical situations that the achievement of specific aims does not lead necessarily to specified generalized outcomes. The same specific abilities may contribute to honesty or dishonesty, to a scientific attitude or a non-scientific attitude, to tolerance or intolerance.

In the meantime, this fact was explained theoretically by certain developments in psychology. It was pointed out that the significance of a particular activity or object is determined by the other activities and objects to which it is related. For example, a golf club in a corner of a bedroom in which a person has just had a half dollar roll under the bed as one meaning and significance, while it has an entirly different meaning on a golf course with a particular shot to be executed.

In other words, the significance of the detailed skills, itmes of knowledge, and activities upon which specific objectives are based is determined by the situation in which they are placed.

When they are dissociated from particular situations, it becomes impossible to predict what meaning or significance they have. Thus, as specific aims were made the basis for instruction without regard for the related elements, the meaning and significance taken on by the abilities required for the achievement of these aims by pupils could not be predicted.

A third difficulty arose from the extent of the detail the procedure developed. Each general aim, it seemed, could be analyzed into an almost infinite number of specific aims. The scientific impetus to the procedure led to further and further analysis in an effort to include all desirable pecific aims and to make them as definite as possible. Pendleton lists 1581 social objectives for English. Guiler lists more than 300 aims for arithmetic in grades one to six. Billings found 888 generalizations which were important in the social studies.

This plethora of detail is shown in courses of study. The committee on social studies of the National Survey of Secondary Education pointed out this condition. One course of study for seventh grade social studies lists 135 objectives. A course in another subject contains 85 objectives. One course for junior high school contains 47 mimeographed pages of objectives.

As a result, the teacher is overwhelmed with aims. Th- lists are so extensive and complex that no reasonable instructional program can be developed around them. It is found by teachers that they limit work unduly, making it impossible to consider adequately individual pupil needs and interests.

A further difficulty was encountered because of an impression this concept of specific aims frequently gives teachers concerning the way in which general aims are achieved. This impresion is strengthened by the terms immediate and ultimate. It is because of this fact that the writers avoid their use. The implication is that after a series of specific (or immediate) aims have been realized, a general (or ultimate) aim will be achieved.

That is, if certain specific aims are achieved each day of the semester, the general aim will be realized at the close of the semester. This led teachers to give attention to specific aims in their day-by-day instruction and to wait until the end of the semester or year to consider whether or not general aims had been achieved. This is contrary to the way learning progresses.

The attitudes, character traits, and other general abilities in terms of which general aims are stated, develop continuously. Every situation in which the individual is placed involves growth in such abilities. Consequently, during daily school work, as children develop or fail to develop the abilities indicated as specific aims, they also develop or fail to develop those abilities indicated as general aims. Whether or not desired general aims are achieved depends upon the relationships established between the various specific factors in the day-by-day situation. The emphasis on specific aims as the direct control of learning situations encouraged teachers to overlook this fact and thus to ignore the really important ends which education should achieve.

The use of specific aims, then, as the major determinant in organizing the curriculum, is of questionable soundness because :

(1) the procedure emphasizes one or at least a very few abilities in learning situations, whereas many abilities of signicance are involved in every situation;

(2) achievement of specific aims does not necessarily lead to achievement of general aims;

(3) the procedure results in such long lists of aims that they can be employed in instruction only with difficulty; and

(4) the procedure gives an erroneous impression of the way abilities classified as general aims are developed.

These difficulties necessitate a re-thinking of the use that should be made of aims in curriculum making and the development of procedures which facilitate such use. It is the purpose of the following discussion to suggest certain points that should receive consideration in this regard and to indicate in so far as possible procedures that contribute to the effiective development of the point of view expressed.

THE NATURE AND FUNCTION OF AIMS

In attacking the problem thus raised, the curriculum worker advisedly may give greater attention to the nature and function of aims than has been customary in the past. Aim is a term of general significance.

It is by no means peculiar, to education, even though it has been used so widely in this connection that we are apt to think such is the case. Every line of planned or conscious activity has in it an aim, for this is merely the term used to describe the end or condition the individual is striving to achieve. This end or condition has a number of characteristics.

In the first place it serves as a real force in directing activity. It is not some mystical far-away condition that the individual vaguely considers might be desirable, but realization of which there is no possibility of directing activity. To be classified as an aim the desired condition or end must be such that something can be and is done about it. In the second place, an aim is peculiar to a given individual or group of individuals. One person cannot have an aim for another person.

The first person may have an aim which involves the second person, but it does not become the second preson's aim until he accepts it as a desirable end to achieve and begins consciously to plan his activities to achieve it. In the third place, aims are dynamic and changing. When they are formulated at a given time they represent the extent of vision operative at that time, but as progress is made toward their realization possibilities are seen more clearly, and the aim may change.

It will be noted from the nature of aims that they exert a general directive influence on experience. That is, a person wishes to accomplish a certain end. He maps out a line of action that seems to be appropriate to achieving the end.

Thut, aims exert influence on the selection of activities. As these activities are carried forward they do not, as a rule, result in precisely the outcomes anticipated and so modifications of activities are required in order to reach the aim.

Here again the aim serves to direct the experience. Finally, as the aim is achieved, new aims evolve from the experience by which it was reached and the directive influence of the aim continues.

In education, there are two groups of aims that must receive consideration. On the one hand, there are the aims of the adults who establish, maintain, and operate the educational system. These are referred to usually as the aims of education. On the other hand, there are the aims of the pupils who are taught in the school system. These are frequently referred to as pupil purposes.

These two groups of aims may, upon occasion, coincide, but generally they do so only as the pupil approaches maturity. It is seldom that the child knows or cares what the aim of the teacher may be. All too frequently the teacher has taken the same attitude toward the aim or purpose of the pupil.

Only as the teacher guides the child in the formulation of aims or purposes that are compatible with the aims of education can the aims of education be realized. The fact that aims of education are adult aims is of great importance in considering the function of such aims. These aims are originated by adults and may appropriately serve to direct the activities of adults who are guiding children. They are or should be the teacher's aims. They should guide him in selecting his activities; they should condition the further development of his aims.

This is sharply in contrast with the function assumed for aims of education in analytical procedures. In such cases, aims of education are assumed to be pupil aims as well as teacher aims. It is considered the function of the teacher to get the pupil to organize his activities around the aims of education. Consequently, aims of education are assumed to provide a suitable basis upon which the child can select activities, organize them, and evolve new aims.

This means imposition of adult aims on chidren. It is not a successful procedure because, in the first place, the nature of aims makes their imposition by one person on another impossible, and, in the second place, children cannot comprehend adult aims, no matter how willing or submissive they may by.

The result is that teachers have assumed that pupil aims coincide with theirs because pupils engage in certain activities, when, as a matter of fact, the real aim of the pupil may be something entirely foreign to the thinking of the teacher.

In brief, from the one point of view, aims of education serve to direct the activities of the teacher and through the activities of the teacher to influence the aims and activities of the pupils. They are not looked upon as sources that may serve appropriasely [for the organizing center and actuating force of the child's activities. From the other point of view, they are supposed to serve as the organizing center and actuating force of the activities of both pupils and teachers.

When aims of education are looked upon as the directive force in the activities of the teacher and not as suitable centers about which pupil activities may be organized, it cecomes necessary to make an entirely different provision for their use than has been generally followed. A statement of aims of education may be considered a checking source to be employed by the teacher in directing his own activities.

As he touches each phase of the experience of the child from the development of the child's aim, through the selection and organization of activities for its realization, and evaluation of outcomes, he checks against the aims of education to see that he is guiding the child in such a way as to provide greatest opportunity for growth in the direction desired by those who maintain the educational system. Aims of education thus exert a direct influence on the experience of the teacher in serving as the basis for selecting and organizing his effect the teacher exerts on the pupil's aims and activities.

SOURCE OF AIMS OF EDUCATION

Aims of education are essentially social in origin. They represent the principal means through which the society which establishes and maintains an educational system indicates the ends which the system should serve. In every case, these demands of society on the educational system are made, although the form of expression may differ. Consequently, the direct source of education is the ideals of the society which which maintains the educational system. Hence, the source of aims of educaaion for American schools is the democratic ideal.

It follows that in the first step which must be taken determining a valid statement of education is to study the democratic ideal and to discover in so far as possible its many implications. This must be accomplished largely through consideration of the work and reflections of leading students of society.

However, the well pondered thoughts of others are not alone sufficient. The curriculum worker must ponder deeply himself. He must come to see democracy in all its achievements and failures, in all its promises and shortcomings. He must appreciate the experience of mankind which led to acceptance of the democratic way of living as the ideal form of life. He must understand how changing conditions and deepening insight necessitate new interpretations of the ideal. When he commences to understand these things he is ready to undertake the task of defining suitable aims for education in a democracy.

DEFINING DESIRABLE TYPES OF CONDUCT

Social idaels are realized only as the individual members of the social group generally develop certain types of conduct which lead to their realization. Consequently, in preparing a statement of aims the types of conduct needed to realize the particular social ideals must be defined.

Such a definition may take the form either of definite solutions to specific problems or of means of solving problems of all types according to certain standards of value. In the former case, the social ideals are such that unvarying responses to situations are desired. Consequently, the individual is trained intensively in the desired responses. He is not encouraged to think or to evaluate.

He is given the solution. In the latter case, the individual is guided in the development of generalized procedures and standards of value. The purpose is not to train him to meet certain situations with unvarying responses, but to meet all situations, new as well as old, according to certain standards of value. Means of solving problems are thus emphasized in contrast to solutions to problems.

Whether conduct considered necessary for the realization of social ideals is defined in terms of solutions to problems or in terms of the ability to develop solutions that are consitent with certain standards of value, depends on the social ideals themselves. In a democracy the intelligent participation of all members in the solution of problems is required.

This means that individuals must have command of the means of solving problems rather than of ready-made solutions. The rapid development of new problems further emphasizes this need, Consequently, aims of education for American schools must be defined in terms of certain generalized controls of conduct which, if developed, will lead to the realization of the democratic ideal.

The nature of these generalized controls of conduct will perhaps be better understood when we consider that it is common practice to recognize certain general types of conduct. That is, certain activities performed in a variety of situations meet the same general standards. We say a man is honest, or thoughtful, or open-minded, or has the scientific attitude. These terms suggest that he engages in the various activities of life in such a way as to conform to certain standards, and to observe certain relationships.

There is some difference of opinion concerning these standards and relationships. Nevertheless, certain general characteristics are agreed upon well enough to define the general nature of a person who is honest and sincere, or who lacks these qualities. These general aspects of behavior are frequently called emotionalized attitudes, generalized controls of conduct, and character traits. As indicated before, they are referred to in this discussion as generalized controls of conduct.

Generalized controls of conduct are appropriate aims for education because achievement of the social ideals of a particular group depends directly upon the nature of the generalized controls developed by the individual members of the group. If the members of the group have widely developed the generalized control of conduct described by the term *considerateness*, it may be expected that the democratic ideal of respect for individual rights will be rather fully realized.

But if people generally lack this generalized control of conduct, or if it is not generalized to a high degree, the inevitable outcome is that the ideal is largely impossible of realization.

This suggests the second step in developing a statement of aims of education. This consists of the indication of the generalized controls of conduct which, if widely developed by the individual members of the social group, will lead progressively to greater realization and effective interpretation of the ideals stated in the first step. In developing this statement, the philosophical method must be relied upon. Two techniques may be employed to aid the reflective process. One is controlled observation. Analytical studies of conduct actually observed may be made to determine what activities people engage in and what are the characteristics, procedures, and outcomes of various types of activities.

Such as analysis may suggest desirable and undesirable types of conduct. The consensus of opinion technique may also be used. A select group of competent persons may be asked to indicated types of conduct deemed necessary and contributory to the realization of the democratic ideal of life. With such assistance as can be secured from these methods, a conprehensive statement of the desired generalized controls should be prepared. Suggestions for development as such a statement may be secured from *The Commonwealth Teacher-Training Study*. A list of desirable traits of teachers was prepared as a part of this study. Separate lists were prepared for senior high school, junior high school, intermediate grades, and kindergarten and primary grade teachers.

However, many of the traits have general significance as controls of conduct. The list for senior high school teachers follows :

1. Adaptability.
2. Appreciativeness.
3. Attractive personal appearance (cleanliness, neatness).
4. Breadth of interest (interest in pupils, interest in community, interest in profession)
5. Considerateness (courtesy, kindliness, refinement, sympathy, tact, unselfishness)
6. Co-operation (helpfulness, loyalty)
7. Definiteness

8. Dependability (consistency)
9. Diligence (industry, patience, perseverance)
10. Enthusiasm (alertness, animation, inspiration)
11. Exactness (accuracy, carefulness, thoroughness)
12. Fluency
13. Forcefulness (courage, decisiveness, firmness, purposefulness)
14. Good judgment (discretion, foresight, insight, intelligence)
15. Good taste
16. Health
17. Honesty (fairness, frankness)
18. Leadership (independence, initiative, originality resourcefulness, self-confidence)
19. Magnetism (approachability, cheerfulness, optimism, pleasantness, pleasing voice, sense of humor, sociability)
20. Open-mindedness
21. Progressiveness (ambition)
22. Promptness (punctuality, dispatch)
23. Propriety (conventionality, morality)
24. Scholarship
25. Self-possession (dignity, modesty, poise, self-control, sobriety, reserve)
26. Thrift

PROVISION FOR EFFECTIVE USE OF STATEMENTS OF AIMS

Statements of aims of education in terms of generalized controls of conduct are very general in nature. Consequently, if teachers are expected to employ them effectively in directing their activities, certain steps may advisedly be taken to assist in this regard.

In the first place, it must be recognized that prolonged detailed study should be devoted by teachers to statements of aims of education. Provision for such study should be a part of a curriculum program. The aims to be realized by an educational program in a democracy must inevitably by complex in nature and sufficiently flexible to provide for continuous reinterpretation.

So long as they possess these qualities they will require careful study and reflection for their interpretation. Teachers, as participants in an enterprise of social significance, may reasonably be expected to give serious, continuous study to the aims to be realized through the work of the school. If this is done as a part of curriculum making the meaning and significance of various generalized controls of conduct for teachers is greatly increased.

In the second place, the meaning of such terms may be clarified a great deal if their outstanding characteristics are indicated in concise statements. Development of such statements should form a part of the procedure of stating aims. An illustration of such clarification is provided by the aims of education stated in connection with the Arkansas State Curriculum Program. Twenty-two generalized controls of conduct are indicated as the aims of education. Each one is elaborated in the following form :

APPRECIATIVENESS : The quality of recognizing or feeling the value or worth of accomplishments of others; race heritage; good workmanship; intelligent thought.

Suggested Dispositions, Tendencies, or Inclinations

The recognition of the value of the contributions to the social heritage of the philosophers and scientific thinkers.

A feeling of respect toward the forebears for their spirit of determination and sacrifice that produced the social heritage.

The feeling of the value of the achievement of people and groups in the school and community.

The feeling of the worth of the scientific method in solving social and civic problems.

A high regard for the spirit of science.

Sensitivity to artistic merit.

CAREFULNESS : The quality marked by the performance of activities with attention and concern; precision; caution; pains, vigilance when guarding against evil and providing for safety.

A. Accuracy : The state or quality of being accurate; freedom from mistake when this exemption arises from carefulness; conformity to a rule or model; precision; exactness; correctness; carefulness.

B. Definiteness : The quality of having an exact signification or positive meaning; the quality of being clear, precise, determinate, unqualified.

C. Thoroughness : The quality of position marked by careful attention throughout, leaving nothing undone; not superficial; searching; hence, completeness.

D. Orderliness : The quality or state characterized by keeping things in order; tidiness; regulation.

Suggested Dispositions, Tendencies, or Inclinations

The disposition to be accurate in thought and execution.
The tendency to avoid superficiality.

The inclination to do well whatever is undertaken.

The disposition to be precise and definite in thought and action.

The tendency to follow a definite plan of action.

CONSIDERATENSS : Thoughtful regard for another's circumstances or feelings.

A. Courtesy : Politeness; courtliness; graciousness; civility.

B. Kindliness : The quality or habit of having a friendly, benevolent disposition; kind-heartedness; good-naturedness.

C. Sympathy : The quality or state of being affected with feelings correspondent in kind or correlative with those of anther person; fellow-feeling; specifically, a feeling of compassion for another's sufferings or evils; pity; commiseration; an agreement of affections, tastes, or inclinations, or a conformity of natural temperament, which makes persons agreeable to one another; harmony; accord.

D. Tact : A quick or intuitive appreciation of what is fit, proper, right; fine or ready mental discernment shown in saying or doing the proper thing, or especially in avoiding what would offend or disturb; skill or facility in dealing with men or emergencies; adroitness, address; cleverness.

E. Unselfishness : The characteristic or state of being unselfish; generosity; thoughtfulness of others. Regard for others' interests, gratifications, advantages. or the like.

Suggested Dispositions, Tendencies, or Inclinations

The tendency to have consideration for the welfare of others.

The disposition to make concessions for maintenance of pleasant relations.

An inclination to respect the point of view of ot hers.

The disposition to be courteous in all contacts with people.

A sensitiveness to the wishes of other people.

A feeling of kindness toward others.

CO-OPERATION : The act of working together to one end or of combining for a certain purpose; joint operation or endeavor; concurrent effort or labor.

A. Helpfulness : The quality or state of affording aid or assistance, of being beneficial, useful.

B. Loyalty : The quality or state of being loyal; hearty service in friendship or love, to a cause, or duty; devoted allegiance to an organization or a superior; *intelligent followership.*

Suggested Dispositions, Tendencies, or Inclinations

The inclination to engage in group activity based upon desirable interests.

The disposition to engage without friction in work, play, and social intercourse with others.

The tendency to adapt oneself to the thought, feeling, and action of one's associates.

The disposition to disagree with another's point of view without personal antagonism.

The tendency to subordinate personal desire to the public good.

DEPENDABILITY : The quality of being worthy of being depended upon; trustworthiness; reliability.

A. Consistency : Agreement or harmony of the elements of a person's life or conduct (*e.g.*, of his profession and practice, of his statements at one time and at another); constant adherence to the same principles of thought and action.

Suggested Dispositions, Tendencies, or Inclinations

The urge to do all work efficiently and honestly.

The tendency to do one's full duty.

The desire to be faithful to promises.

The disposition to maintain emotional balance in face of difficulty or defeat.

THE SCIENTIFIC ATTITUDE : The tendency to, or the habit of being, precise and accurate, impartial, objective, and open-minded.

Suggested Dispositions, Tendencies, or Inclinations

The disposition to respect and to use the experimental method.

The inclination to believe in universal cause and effect relations.

The disposition to be free from superstitious beliefs.

The tendency to give careful attention to all details which are relevant to the solution of problems.

The tendency to take an objective view of basis.

The third step in facilitating the effective use of generalized controls of conduct as aims is to suggest various elements which are frequently involved in them. This require consideration of the composition of generalized controls of conduct.

COMPOSITION OF GENERALIZED CONTROLS OF CONDUCT

Observation of the flow of activities which we describe as conduct reveals that responses possess three noticeable characterittics. In the first place, there are responses that are made unifarmly and quickly to certain stimuli. These are usually referred to as specific habits and motor skills. They make possible such activities as walking, talking, and the use of dates, names, and number facts. Second, there are responses to novel situations. Such situations possess a problem element and require the individual to organize or select an appropriate response. This is generally response. This is generally referred to as knowledge. Included are ideas which take the form of generalizations and principles. Third, there are various emotional reactions.

These are frequently referred to as attitudes or appreciations. They accompany all conscious activity and depend to a considerable extent upon the outcomes of previous experience related to that which is in progress at the given time. All three of these characteristics are important attributes of a generalized control of conduct.

No such control can conceivably be developed without many specific habits and motor skills as a basis. Neither can it be developed without knowledge or the means of meeting new situations, and if these two elements are present without the proper emotional response, the generalized control of conduct is as far from functioning as before.

Thus, generalized controls of conduct can be developed only as specific habits, motor skills, and knowledge are associated with certain emotional responses. In brief, a generalized control of conduct is represented by the operation of a pattern of specific habits, moter skills, and knowledge with a certain emotional response. Specific habits, motor skills, and knowledge are the framwork on which such controls must be built by associating with them proper emotional responses.

Conduct, considered at any particular time, usually involves all three of these elements. That is, a person depends continuously on specific habits and motor skills: there are elements of the new or novel, to greater or lesser degree, which must be met; and there is always some type of emotional response.

Consequently, it impossible in actual experience to have one of these elements present without the others. Nevertheless, some abilities involve specific habits and motor skills to a large extent; and certain ideas, in the form of generalizations and principles, are found especially useful in meeting new situations. Therefore, stating aims in terms of generalized controls of conduct does not mean, as has sometimes been assumed, ignoring habits and knowledge.

It means, rather, seeing that the habits and knowledge are used in particular situations which make operative the desired generalized controls of conduct. It requires that habits and knowledge be considered the means of meeting situations in certain desirable ways rather than as ends in themselves.

It becomes necessary, nevertheless, for the teacher to give direct attention to the habits and knowledge which the child possesses. If the child lacks the ability with numbers required for him to be honest and accurate in the various situations in which he finds himself, this lack should be of immediate concern to the teacher.

If his work habits and knowledge of scientific concepts are such that he cannot exhibit the scientific attitude in various situations, this should receive the teacher's attention. When a particular generalized control of conduct fails to operate, the first question that may well be asked is whether the individual possesses the essential habits and knowledge for its operation in the given situation. If not, he must be guided in their development.

Consequently, the effectiveness with which the teacher translated the aims stated in terms of generalized controls of conduct into classroom experiences depends to a large extent on his ability to recognize the habits and knowledge essential for the operation in given situations. The habits and knowledge required by particular situations cannot be defined apart from the situations, thus the teacher has to make the final analysis and interpretation.

But this analysis may be facilitated if a suggestive list of such habits and knowledge is available. Preparation of such a list is the third way in which curriculum making may aid teachers in the effective use of aims.

A number of sources will be found helpful in developing such a list. Analysis of ability involving specific habits to a large extent has been carried out rather completely in researches in the various subjects. These abilities should be indicated in the terms in which they function. That is, ability to read is an ability which functions as a unit. In involves many specific habits, such as, eye movement, word meaning, and word recognition.

These specific habit do not function in and of themselves but as a part of the larger whole we describe as reading. So long as these abilities which actually function are made the unit of consideration, teachers will not be encouraged to teach a seriles of specific habits with the idea that added together they represent the whole ability as it functions. This is as error frequently made. Representative abilities of this type are :

Ability to read
Ability to write
Ability to speak
Ability to maintain correct posture
Ability to study
Ability to operate mechanical appliance
Ability to use number facts and combinations
Ability to represent things graphically
Ability to express oneself musically

Generalizations and principles of significance are also suggested by researches in various subjects. Science, mathematics, and social studies have especially emphasized such knowledge. It preparing an illustrative list of such generalizations and principles, no effort should be made to make the list comprehensive. This an almost impossible task because such statements are so numerous and are presented on so many different levels.

Moreover, there are no generalizations and principles that are absolutely essential for the development of particular generalized controls of conduct. The experience of the individual determines what ones may be required. This, thus list should be just what the term "suggestive" implies. It suggests to the teacher knowedge that frequently is used in effective generalized controls of conduct. In so far as possible the list should include those generalizations and principles most commonly used.

These suggestive lists of abilities involving to a large extent specifie habits or motor skills and generalizations and principles may be presented in a variety of ways. The particular form chosen should depend to a considerable extent upon the training and experience of the teachers who must use the aims. The form chosen should also be subject to revision as teachers broaden their experience in use of such statements.

The statement of aims in the Virginia state course of study provides an illustration of one form in which these materials may be presented. The generallzed controls of conduct are given in one classification ; suggestive generalizations and principles, classified under major headings, are given in another classification ; and special abilities involving to a large extent specific habits and motor skills are given in a third. Twenty-four classifications of generalizations are given with about 150 illustrative generalizations. Seventeen special abilities are listed. The classifications are coded so that ready reference may be made to them. The following is illustrative of the form of presentation :

GENERALIZED CONTROLS OF CONDUCT

104. The Attitude of Self-Integrity

The disposition to accept responsibility for the consequences of one's acts,

Freedom from fear, worry, and the sense of inferority.

The disposition to maintain emotional balance in the face of difficulty or defeat.

The brief in the worth of one's personality.

The tendency to face reality squarely.

The desire to be faithful to promises.

The tendency to accept criticism cheerfully.

Willingness to assume the obligations of leadership.

The urge to do all work efficiently and honestly.

The tendency to do one's full duty.

The determination to be happy.

105. The Attitude of Respect for Personality

The inclination to believe in the integrity and worth of other persons.

The tendency to admire fine qualities in other people.

Willingness to let others develop their own personlities,

The disposition to insist upon fair play in all situations.

The disposition to make concessions for the mantenance of pleasant relations.

The belief in equality of opportunity.

The tendency to have consideration for the welfare and convenience of others.

The desire to co-operate with others.

The inclination to believe that personality indicates the nature of the creative force of universe and the ultimate meaning of creation.

The disposition to regard personality as the key to the individual's success.

106. The Attitude of Critical Mindedness.

The tendency to seek explanations, causes, and consequences of social and natural conditions.

The disposition to consult reliable authorities.

Tne inclination to distinguish between belief and proof.

The tendency to question autority constructively.

The disposition to discriminate and to evaluate and verify statements heard and read or things seen.

117. The Attitude of Respect for Constituted Authority

Willingness to surrender personal independence in the proportion that social justice is extended to all persons.

The determination to promote the extension to all persons of those rights stated in the preamble and bill of rights of the Constitution ; namely, justice, liberty, freedom of religion, etc.

Active and intelligent obedience to all laws while reserving the right to advocate modification of any that prove unjust.

Loyalty to the government, the school, and other social institutions.

The desire to make success within the social group possible to all as an antidote for anti-social conduct.

The disposition to respect the property rights of others.

The tendency to obey parents.

GENERALIZATIONS AND PRINCIPLES

201. The Understanding of the Interdependence of All Forms of Life. Individuals are dependent upon other individuals and have responsibilities to them.

Individuals are dependent upon social groups and have responsibilities to social groups.

All types of groups are dependent upon one another and have responsibilities to each other.

Man's thinking grows out of his experience with individuals, groups and nature.

People are dependent upon the wise use of plants and animals.

Personal liberty is decreased as man increases his control of nature and society.

Opportunities for exploitation increase as interdependence grows.

202. The Understanding of the Necessity of Man's Adapation to Changing Conditions.

Nature and social life are in a constant state of changes.

Man's conception of the truth changes.

Man's survival and happiness depend upon his ability to adapt himself to changed ways of doing things.

Much knowledge yet remains to be revealed.

Man's success depends upon his ability to adapt himself to those aspects of nature that he has not yet learned to control.

Man's concepts are limited by the customs, ideas, and knowledge of his time.

Man resists change of ideas, ideals, and concepts.

203. The Understanding of Man's Increasing Control of Nature.

Man has modified the nature of plant and animal forms through application of the knowledge of the knowledge of the laws of heredity.

Man has increased the quantity and improved the quality of raw materials of food, clothing, and shelter.

Man has increased the power available for his use.

Man has increased the distance that he can cover in a given length of time.

Man has increased his ability to transport materials long distances with speed.

Man has increased the distance over which he can transmit messages in a given length of time.

Man has increased his means of using power to satisfy his wants.

Man has increased his supply of useful plants and animals by their domestication, wise use, and protection.

204. The Understanding of the Influence of Nature upon the Development of Plants, Animals, and Civilization.

All organisms must be adjusted to climate, natural resources, topography, and other environmental factors in order to survive in the struggle for existence.

Reproduction, the struggle for existence, variation, natural selection, and heredity constitute the basis of the physical development of life.

Food, oxygen, certain conditions of temperature, moisture, and light are essential to the life of most living things.

Micro-organisms are the cause of some diseases.

Heredity largely determines the differences and resemblances between parents and offspring.

There are processes that go on within an organism that are vital to its continued existence.

Types of civilization have been largely determined by climate, nature resources, and topography.

Man's customs, occupations, habits of work, and modes of living have been affected by climate, natural resources, and topography.

Density of population is influenced by climate, topography, and availability of natural resources.

ABILITIES INVOLVING SPECIFIC HABITS AND MOTOR SKILLS TO A MARKED DEGREE

301. The Ability to Read.

The ability to use mechanics needed in reading.

The ability to analyze, interpret, and evaluate reading materials.

The ability to use reference books.

The ability to interpret thought in oral reading.

The ability to use silent reading as recreation.

303. The Ability to Write.

The ability to express one's thoughts clearly, forcibly, and correctly in all forms of written discourse.

The ability to spell needed words.

The ability to use handwriting.

305. The ability to Study.

The ability to begin work prompty.
The ability to ignore both internal and external distractions.

The ability to get a clear insight into the meaning of the material to be learned.

This ability to concentrate on the important elements of a discussion.

The ability to review in spare mements material which has been learned.

The ability to apply newly acquired principles in wider fields.

The ability to take notes which will insure ready availability of material or ready reference to sources.
The ability to concentrate on a problem until it is completed.

The ability to make skillful use of such aids to study as tables of content, indexes, card catalogs, reader's guides, etc.

The ability to keep in mind that work is not being done for teachers.

The ability to provide external conditions of work – light, temperature, humidity, chair, desk, etc.— favorable to study.

The ability to provide the tools of study.

The ability to form a place-study and time-study habit.

306. The Ability to Use Quantitative Symbols and Procetures.

The ability to use integers.

The ability to use measures and measurements.

The ability to use fractions.

The ability to use graphs.

The ability to check answers.

The ability to think through the solution of a problem before computation.

The ability to make computations accurately.

The ability to work with reasonable speed.

The ability to interpret problems carefully.

The ability to estimate quantities.

The ability to become sensitive to the uses and values of the quantitative aspects of life of whatever sort.

FINAL STEP IN USE OF AIMS MUST BE TAKEN BY INDIVIDUAL TEACHERS

The steps outlined thus far in developing a statement of aims will provide a master check list for the use of teachers in planning and directing instruction. This final step must be taken by individual teachers for it is impossible to predict just what combinations of abilities will operate to make the generalized controls of conduct function in given situations. As each teacher plans instruction and guides pupils, he should check his activities constantly against the statement of aims. Only in this way will aims of education actually provide direction for the educational program. This places a greater responsibility on teachers than customarily has been considered necessary. However, it is a procedure consistent with the growing recognition of the fact that in the final analysis effectiveness of instruction depends on the ability of individual teachers to recognize and meet the needs of individuals children under given conditions. The procedure here suggested provides flexibility in the use of aims that permits teachers to base instruction on the needs of children. The points at which definite checks should be made against the statement of aims are indicate in succeeding chapters.

6

Modern Secondary School Curricular

When the desired direction of growth has been defined by the aims of education, the next problem encountered in curriculum development is to provide limitations for the various phases of the curriculum which stimulate regular, consecutive movement of the experience of the learner in the desired direction. This requires that the curriculum be so arranged that each experience of children grows normally out of past experience and leads on to other experiences of increasing significance. The problem, in brief, is that of defining the general limitations of the curriculum in such a way as to provide for a flow of experiences throughout the school life of the child that will possess maximum breadth and depth of meaning and significance.

Flow of experience may be likened in certain respects to the flow of a river. It is continuous and unbroken, each phase moving imperceptibly into the next ; yet in may possess widely varying characteristics at different times. Just as streams differ in type so may experiences differ. Some streams have poorly defined banks, and many obstructions in their beds. Such streams tend to wander and overflow, and to be divided into many diverse currents and eddies. Other streams have well-defined banks and few obstructions in their beds. In such streams the water gathers inbreasing momentum and the stream gains both depth and breadth as it moves forward.

Similarly, experience may be of the type that wanders here and there with no clearly marked course of development. It may encounter obstructions and form diverse currents and eddies which take the form of personality conflicts and inconsistent action. Or experience may possess unity, wholeness, and consistency. A continuous reconstruction of ideas, beliefs, and modes of action may occur with the forward movement. In this case cross currents are reduced to a minimum for conflicts are resolved as they develop and experience moves forward with increasing depth and breadth of meaning.

Organization of the curriculum to provide for this latter type of experience is one of the most important phases of curriculum development. Consideration must be given to it throughout curriculum development, but its successful achievement depends first of all on an adequate definition of the general boundaries within which the curriculum should develop. Definition of these boundaries is a problem which generally has not been analyzed with care. It is an especially important problem because of the many obstructions in the curriculum which block the flow of the experience of the learner. Unrelated subjects and breaks in the curriculum at each administrative division of the school are especially noticeable obstructions.

TEXTBOOK PROCEDURE

Traditionally, scope of work in American scoools is determined by the organization and content of textbooks. When a school system adopts a text the tendency is to assume that the organization and materials of the text represent the work that given classes should cover. The traditional concept of teaching —covering a specified number of pages in the text—is a part of this general attitude of reverence for textbook materials and organization. With this point of view functioning, the task of curriculum making in connection with scope of the curriculum has been largely a matter of indicating the number of pages to be covered during specified periods of time. Twenty years age Moore described this procedure as follows :

> That it (knowledge) may be passed on easily, it must be prepared in little molded cubes or accurately weight does. That is the work of textbook makers and of manufacturers of methods.Courses of study are written chiefly, in many cases, to indicate the quality which every good retailer of knowledge must succeed in bring in the memory of the child.

There are a number of reasons why this procedure has perused so long. The dominant one, perhaps, is that the procedure a logical and may be easily applied. It simplifies and objectiives the task of the curriculum worker, the teacher, and the administrator. The least capable teacher can assign pages in a textbook and hear pupils recite the facts involved. He can give evidence that he has done his part by covering a given number of pages.

Thus he has an alibi for failure because he can place the blame for low achievement on his pupils. From the administrator's point of view, it is easy to divide the work of the school, to tell precisely where every child should be in his work, and to have a systematic organization that appears to separate smoothly.

Even though educational theory has been challenging, with increasing emphasis, the basis assumptions of the procedure for three decades, it is probably still the dominant means of determining the scope of work in American schools.

There are many illustrations in courses of study of the application of this procedure A good one is found in the 1927 Kansas state course of study. The introductory statement to Aritmetic in the third grade, for example, is, "The work of this grade is based on S——'s *Primary Arithmetic* and covers pages 1 to 152, inclusive, with the text in the hands of the pupils." The work is then divided by months. Pages 1 through 19 are to be covered the first month ; pages 20 through 38 the second month ; pages 39 through 57 the third month ; and so on for each succeeding month. The 1929 Georgia state course of study provides another illustration. The form in different subjects varies somewhat. The scope of fifth-grade history it outlined as follows :

Texts :

Trans' *First Lessons in American History*
Trans' *First Lessons in Georgia History*

FALL TERM

AMERICAN HISTORY

Chap. 1. Discoverers and Explorers :

A. Christopher Columbus.
B. John Cabot.
C. Americus Vespucius.
D. Balboa.
E. Magellan.
F. Ponce de Leon.
G. Cortez.
H. Narvaez.
I. De Soto.
J. Coronado.
K. Verrazano.
L. Cartier.
M. Champlain.

Chap. 2. The English Colonists :

A. Sir Walter Raleigh.
B. The Settlement of Jamestown.
C. The Settlement of Plymouth.
D. Other Colonies in New England.
E. The Dutch Come to the New World.

F. Lord Baltimore and the Colony in Maryland.
G. William Penn and the Colony of Pennsylvania.
H. The Carolina Colonies.
I. James Oglethorpe and the Colony of Georgia.
J. The Original Thirteen Colonies,

Chap. 3. How the French Lost America :
A. Marquette Explores the Mississippi.
B. The French Claim Louisiana.
C. The Young George Washington.
D. Braddock's Defeat.
E. The Capture of Quebec.
F. Life in the Colonies :
  (1) Customs and Beliefs.
  (2) Travel.
  (3) Servants and Slaves.

(The entire year's work is entlined in this manner.)

The slavish following of textbooks, which results from this procedure of defining scope, has been strongly condemned by the progressive education movement because of the limitation thus placed on the opportunity to provide children rich and varied experiences. Such a restriction, it is held, encourages memorizing at the expense of understanding fundamental meanings, and makes education a process of administering to the child certain prescribed doses of subject matter regardless of his particular needs and abilities.

In the revolt against the extreme restriction imposed by following textbooks page by page, many progressive schools have gone to the opposite extreme. In such cases, no guidance at all is provided teachers for determining desirable scope of work. Each teacher is left to his own devices to discover what will be most fruitful for the grough of children he is teaching. In some cases the teacher is even encouraged to limit the direction given children. He is told that the teacher should be in the background and that the children should decide what they wish to do.

This extreme position, often referred to as the "planless curriculum," has been severely critizeed. School administrators have held it to be an impractical procedure for public school systems. They have pointed out that transferring pupils from school to school becomes an impossible administrative problem under this plan. The children, as well, are subjected to the whims of individual teachers. Educational theorists have objected to the procedure on various grounds.

Some have held that there are definite phases of the group culture with which a child must be familiar and that this procedure does not provide for contacts with all these desirable phases. They point out that a child may deal intensively with a few phases and entirely ignore numerous other important ones. They further hold that this procedure makes it extremely difficult to assist the teacher to improve his instruction.

Some of the closest friends of progressive education have considered this entire lack of organization undesirable. Rugg states, "I am convinced that the outstanding weakness of laboratory schools is .....lack of outlines planned-in-advance." Dewey states in connection with this point :

> Organization and administration are words associated together at the traditional scheme, hence organizationiz conveys the idea of some thing external and set. But reaction from this sort of organization only creates a demand for another sort. Any genuine intellectual organization is flexible and moving, but it does not lack its own internal principles of order and continuity. An experimental school is under the temptation to improvise its subject-matter. It must take advantage of unexpected events and turn to account as expected questions and interests. Yet if it permits improvisation to dictate its course, the result is a jerky, discontinuous movement which works against the possibility of making any important and tribution to educational subject-matter. Incidents are momentary but the

use made of them should not be momentary or short-lived. They are to be brought within the scope of a developing whole of content and purpose, which is a whole because it has continuity and consecutiveness in its parts.

As the inadequacies of the textbook and extreme freed procedures have become increasingly evident, efforts have been made to develop more satisfactory ways of defining the scope of the curriculum.

SUBJECT MATTER PROCEDURE

Some curriculum programs have made a short step from the traditional textbook procedure for defining scope to a method which we shall designate as the subject matter procedure. In this procedure, the definition of scope is not restricted to the materials presented in a particular textbook.

Instead, all the intent in a particular subject filed is convassed. What is considered desirable for children is selected and organized for logical development. This content is then divided by grades and by instruction periods. When so divided, it serves to indicate the scope of work for each grade. An illustration of the careful use of this procedure is provided by the Long Beach, California, *Course of Study in Nature Study and Elementary Science*.

The introduction opens with the following statement: "This course based on the nature materials with which the pupils come in contact at home, at school, and on their week-end trips." Tne organization is given in Chart I. An examination of this chart all reveal that the usual subject lines and progressions form the basis of organization ; that the major divisions correspond a zoology, botany, and physiography ; and that the classifications under the major headings follow usual subject classifications.

The New Orleans course of study in geography outlines the work on the same basis, although a somewhat different

CHART I

Long Beach, California, Course of Study in Nature Study and Elementary Science*

Nature Attitude	*Nature Activity*	*Nature Knowledge*	*Emotional Attitude*	*Civic Attitudes*
1. To stimulate the child's interest in the out-of-doors and his curiosity concerning cause and effect.	2. To stimulate the child's careful observation of nature in order that he may draw truthful conclusions concerning it and also that he relate clearly his nature experiences and thus share them with his asseciates.	3. To increase his knowledge concerning the interrelation of the various types of life with one another and with physical nature.	4. To increase the child's sympathy with nature and to help him overcome his superistition, prejudice, needless fear, and desire to hurt of kill unnecessarily.	5. To impress the child with the need for civic recognition of nature's contribution to city welfare; to secure his interest in city beautification and...protection of parks and grounds about homes and public buildings; to secure his co-operation in matters concerning individuals and public health, and to obtain his willing obedience... to laws projecting...

1		3	4	5	6	7
						natural resources
Grade I	First Semester	I. Interesting butterfles, moths, and caterpillars II. Birds III. Trees	II. Birds : judgments through observation, class reports		I. Interesting butterfles, moths, and their caterpilars	III. Tress.
	Second Semester	I. Shore life II. Flowers III. Clouds	I. Shore life : solution of problems through observation IV. Pets : observation and judgments as to care needed...		IV. Pets : rough play, neglect	II. Flowers, wild fllower conservation
Grade II	First Semester	I. Intect homes II. Spider homes III. Bird homes and nurseries IV. Gopher and squirrel homes		V. Children's homes nature materials for homes	II. Spiders : homes and young III. Pets : rough play, neglect	V. Children's homes
	Second Semester	I. Ocean homes II. Plant homes		II. Potting plants, moisture, sun-		

1	2	3	4	5	6	7
		III. Wild flowers		shine, soil, etc.		
Grade III	First Semester	III. Sun, moon, rain, wind	I. Pets :... II. Seed collections; judgments as to advantages of types of seed in distribution	III. Wind, rain, etc. etc.	I. Pets : white rats, rough play, neglect	
	Second Semester	I. Shell collections II. Fresh water collection III. Dry land animal collection IV. Bird...collection			II. Crayfish, salamanders in acquarium III. Collection of lizards, horned toads, land turtles	
Grade IV	First Semester	II. Poinsettias	I. Birds : observation assignments. Reports in class on observation.	I. Bird friends : A.B C.	II. City animal friends	I. Birds, conserva- II. Christmas plants
	Second Semester					I. City plants II. City animals III. City health
Grade V	First Semester		I. Insects obsrvation	I. Insects in		

1	*2*	*3*	*4*	*5*	*6*	*7*
			assignments. Reports in class on observation	home and garden II. Living plants		
	Second Semester	I. Soil and garden		IV. Gopher	II. Toads	V. Value of gardening and the healthful preparation of garden food; Problem II, III
Grade VI	First Semester	III. The earth and the moon		I. The stars II. The earth and sun		
	Second Semester	I. The seasons and plant life II. The seasons and animal life				II. Laws concerning migrating game birds

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* Columns 6, 7, and 8, Economic Attitude and Activity, Cultural Attitude and Activity, and Spiritual Attitude, respectively, are omitted. Adapted from Long Bench Course of Study, *op. cit.*

form is used. The outline of work for the fifth grade follows :
Outline Work :

- I. The Earth as Whole.
    - 1. Continents and Oceans.
    - 2. Directions, Latitude, Longitude.
    - 3. Size.
    - 4. Motions.
    - 5. Climate Belts.
        - A. United States' Possessions in Torrid Zone.
            - a. Philippines.
            - b. Hawaii.
            - c. Puerto Rico and Virgin Islands.
            - d. Panama Canal.
        - B. United States' Possessions in Frigid Zone.
            - a. Alaska.
- II. Other Countries of North America.
    - 1. Canada and Newfoundland.
    - 2. Mexico and Central America.
    - 3. West Indies.
- III. South America.
    - 1. As a Whole.
        - A. Location with regard to : oceans, latitude and longitude zones, and hemispheres,
          Other countries,
          Large world ports,
          New Orleans.
    - 2. Size.
      Relative; as compared with other continents.
      Actual.
    - 3. Form.
      General shape, coast irregularities.

4. Surfaces.
   Highlands and lowlands.
   Drainage.
5. Climate, as determined by :
   Latitude, altitude, winds, currents.
6. Life.
   Native plants, humans.
7. Resources.
   Plant, animal, mineral.
8. People.
   Race, industries and trade routes, cities.
9. Political Divisions :
   In general :
   Ie regard to eignt topics given above.
   B. Argentine.
   C. Brazil.
   D. Chile.

(The entire year's work is outlined in this manner.)

Other illustrations might be given but these two serve our purpose, for, although the form of presentation may vary, the general basis is the same. In most ceses it is problem that particular textbooks and textbook organizations have exerted an important influence on the outline of subject matter to be covered, even though a text is not referred to definitely. National committees have also exerted great influence on the scope of work when outlined by this procedure.

This procedure is subject to most of the criticism applicable to the textbook procedure. It does have the advantage of not being restricted to the ideas of a particular author, and it permits classroom teachers and curriculum workers to add their contributions. So far as teaching procedure is concerned, however, the basic assumption is that the task of the taacher is to teach predetermined, limited phases of subject matter; and to proceed through them in a particular order. There appears to be nothing inherent in this procedure to encourage the organization of instruction in a manner differing from that employed with the textbook procedure.

From one point of view this procedure may be inferior to the textbook procedure. If logical arrangements of subject matter are to define the scope of work, it is possible that the textbook writer can provide these arrangements in better form than committees of teachers and general curriculum workers. Especially does this point merit consideration as text book writers come more and more to base their work on actual experience with children.

AIMS PROCEDURE

Probably the most widely used method of indicating scope of work in curriculum programs during recent years has been the aims procedure or some adaptation of it. Use of aims to define the scope of the curriculum rests on analysis of aims as discussed in the preceding chapter. Consequently, it is necessary here to reconsider certain aspects of analysis of aims as they relate specifically to the problem of defining the scope of the curriculum. Although aims have been used widely to define scope, only rarely has the procedure been applied with consistency on a comprehensive basis. Consequently, many variations of the procedure are to be found.

The "activity analysis approach" to curriculum making as developed by Bobbitt, depends on aims define desirable scope of work. The general steps as they relate to scope are :

(1) divide human activities into major fields,

(2) state specific abilities needed in each major field,

(3) eliminate the abilities which should be developed by general processes of living,

(4) detamine the abilities which should be achieved in the various school divisions (Bobbitt uses the terms, early grades, middle grades and later grades),

(5) derive subject objectives from the form going lists.

The work to be covered in each grade is indicate by the objectives so derived. This particular approach was followed in detail in the Los Angeles curriculum program a 1922.

The aims procedure has been employed more frequently the another general plan. This plan is based on the following general steps or a variation of them.

First, a general, all-inclusive aim of education is stated.

Second, this all-inclusive statement is broken up into a small number of highly generalized statements.

Third, the statement of a small number of aims in divided to suit the administrative organization of the school. For example, with a junior high school organization, the phase of these aims to be achieved by the elementary school are state as the divisional aims for the elementary school; those to be achieved by the junior high school are stated as the aims for the junior high school; and those to be achieved by the senior high school are stated as the aims for the senior high school.

Fourth, the aims for each division are further broken up by stating the objectives to be achieved by each subject.

Fifth, the general objectives for the subjects in each division are analyzed into specific objectives for the several grades; this is, statements in as specific terms as possible are made of the part of the subject objectives to be achievec in each geade. The specic objectives for all the subjects in each grade represent the work to be carried forward in the respective grades and indicate the scope of work for the grades.

In the St. Louis, Missouri, curriculum program of 1924-25 this method was followed with unusual thoroughness. Hence the St. Louis plan is presented for illustration. The "General

Aim of Public Education in St. Louis," which serves as the basis from which other aims presumably are derived, is as follows:

> To develop the individual to the end that he may effectively direct his life toward his own self-realization and toward his participation in the creation and realization of the ideals of society. . . .

This general aim is divided into seven phases which serve as a classification for more detailed statements of aims.

A. Health and Physical Development.
B. Discovery, Communication, and Expression.
C. Worthy Home Membership.
D. Vocation.
E. Worthy Citizenship.
F. Worthy Use of Leisure.
G. Ethical Character.

Divisional aims are derived from the foregoing classification. For example, the divisional aims falling under *Health and Physical Development* are as follows:

KINDERGARTEN-PRIMARY

A. Health and Physical Development.

I. Knowledge:
  1. Necessity for personal cleanliness.
  2. Sanitary care of personal belongings.
  3. Clean and safe surroundings.
  4. Simple everyday safety precautions.
  5. Healthful food and drink.
  6. Clothing suited to weather conditions.
  7. Need for favorable conditions for rest.
  8. Healthful conditions for work and play.

II. Habits:
  1. Cleanliness: face, hands, teeth,

2. Cleanliness of personal belongings.
3. Choice of healthful food and drink.
4. Choice of clean and safe surroundings.
5. Rest when tired.
6. Protection against rain, heat, and cold, with proper clothing.
7. Observance of simple safety and health rules such as, looking both ways when crossing a street, proper use of sharp instruments, covering cough and sneeze, etc.
8. Cheerfulness.
9. Exercise though suitable play and work.

III. Ideals :

Desire to grow strong and happy like certain persons in when their in crests center.

IV. Appreciations :

Strength and happiness gained through observing simple physical and mental health practices.

ELEMEMTARY

A. *Health and Physical Development*

I. Knowledge :

1. Hygienic practices suite to later childhood.
2. Precautions necessary to safeguard life and health.
3. Proper physical exercise to promote and maintain health.
4. Approprate and comfortable clothing.
5. Right bind and amount of rest.
6. Favorable home, school, and neighborhood conditions.
7. Wholesome food and drink.

8. School and neighborhood health agencies.
9. Social and economic value of health.

II. Habits :

1. Assistance in the sanitation and cleaniless of the high school, and community.
2. Observance of rules concerning fresh air, rest, cleanliness proper eating, appropriate cleaning, recreation and the special sense organs.
3. Carefulness pertaning to the physical safety of self and others.
4. Caution a regard to contain on and infection incidents later childhood.
5. Cheerfulness and self-control.
6. Mental cleanline.

III. Ideals.

1. Cleanliness, of person, home, school, and neighborhood.
2. Athletic attainments.
3. An outdoor boy and girl.

IV. Appreciations :

1. Personal cleanliness.
2. Sanitary and restful home and school.
3. Fresh air and wholesome exercise.
4. The out-of-doors.
5. Strong healthy body.
6. Effective response in emergency.

INTERMEDIATE

A. *Health and Physical Development*

I. Knowledge :

1. Physiological and dietary facts concerning nutrition.

2. Hygienic dress.
3. Principals underlying heating, lighting and ventilatior.
4. Facts fundamental to personal domestic, and public sanitation.
5. Hygienic and biologic information suited to the early adolescent.
6. Care of the younger children suited to the early adolescent.
7. First aid and public safety.
8. Occupational hygiene.
9. Health agencies.
10. Physical standards for early adolescents.
11. Relation of physical fitness to good citizenship.

II. Habits :

1. Skillful participation in wholesome and appropriate physical activities.
2. Skillful participation in creativity.
3. Diet and table etiquette appropriate to the early adolescent.
4. Avoidance of infection.
5. Correct posture.
6. General sanitation.
7. Sufficient sleep under proper conditions.
8. Optimism.

III. Ideals :

1. Fitness, internally and physically.
2. Personal, school and community cleaniness.
3. Mental composur.
4. Good appearance in relation to health.
5. Wholesome enjoyment of work and play.

6. Moderation in all physical activities.

IV. Appreciations :

1. Health as an asset and sickness as a liability to the individual and community.
2. Value of a normal healthy body.
3. Great natural out-of-doors.
4. Possibility of overcoming physical handicaps.

HIGH SCHOOL

A. *Head and Physical Development*

I. Knowledge :

1. Physical standards of successive stages of adolescent development.
2. Hygienic and biologic information suited to the adolescent such as will function in adult life.
3. Important development in the body and in the functions of its organs during adolescence, such as the heart, glands, etc.
4. Race presentation and heredity.
5. Interpretation of common symptoms of bodily irregularities or disturbances.
6. Suitable forms of physical recreation with some attention to those which may carry over to adult life.
7. Influence of emotions on the health of adolescent.
8. Scientific interpretation of environment.
9. Current development in science concerning health preservation.
10. Dietary and nutritive value of foods.

II. Habits :

1. Personal hygienic practices on the adolescent level.
2. Periodical physical examination.
3. Diet, clothing, exercise, posture, and sleep appropriate to maturing youth.
4. Skillful practice of first aid.
5. Cultivation of healthful emotions.

III. Ideals :

1. Proper emotional attitude toward health, personal, domestic, public.
2. Importance of being a good ancestor.
3. A healthy mind in a healthy body.

IV. Appreciations :

1. Desirability of physical excellence for life pursuits.
2. Dependence of health upon scientific understanding of environment.
3. Importance of moderation in all things.
4. Valve of scientific health methods.
5. Need for organized effort in promoting community health.
6. Importance of outdoor activities.

This arrangement of aims provides the general outline of scope of work. All subject committees derive their objective from this basic outline. Subjectives, so derived, are stated as *General Objectives* for the subject, *Divisional objectives*, and *Specific Objectives* for the respective grades. The specific objectives provide the basis for organizing instruction. For each specific objective in each subject on each grade level, activities, procedures, and desirable outcomes are suggested. Thus, specific objectives, derived by logical steps from a single inclusive aim of education, indicate the work allotted to each grade.

In most cases where the aims procedure is employed, the logical steps of deduction have been less thoroughly followed than in St. Louis. Sometimes the general aims for each subject are stated independetly as the beginning point and grade aims are derived from these. In other cases, general aims of education are stated and subject aims are derived directly from them. A brief examination of courses of study reveals a number of other variations of the method.

The aims procedure for defining scope has the advantage of being highly logical. It appears perfectly reasonable and desirable to evolve specific objectives from the all-inclusive aim of education. It seems sound to expect all educational efforts to be directed toward achieving this aim. For this reason it has wide appeal.

However, inasmuch as the procedure rests on the process of analyzing general statements of aims into specific statements around which instruction may be organized, it is subject to the difficulties of analysis of aims pointed out in the preceding chapter.

Especially important for defining the scope of the curriculum is the concept of learning involved. It may be implied from the procedure that we might expect on the first day of school, specific objective I to be achieved ; on the second day, specific objective II ; on the third day, specific objective III ; etc When II is added to I, and III to II and I, and so on with the other specific objectives, the ultimate result is the achivement of the general objective for the year. Year after year this additive process continues until the objectives of each division are realized, and finally the general aim of education is preseumed to be accomplished.

Asis pointed out in Chapter VI, this appears to be an inadequate concept of learning. The child does not develop one fragment of an ability or trait today, another tomorrow, and another next year ; and thus finally come out with the whole ability or trait developed at the completion of the elementary school, the junior high school, or the senior high school. Rather he is a growing whole like any growing thing, and although his characteristics may be modified from day to day, this modification occurs as a total process, affecting the whole individual.

Thus, nearly every learning situation involves a complex pattern rather than a simple relationship. One situation may involve abilities a-b-c-d, the next abilities a-b-xy-d, and the next abilities m-n-o-x-a. Ability a must be developed in situations with such varieties of relationships. Special attention may be given a, but it cannot safely be given exclusive attention. To do so ignores the complex nature of behavior. This complexity, Hollingworth points out as follows :

> The fact is...that nearly any event in our experience and nearly every act in our behavior is complex. It is in itself analyzable and is a more or less elaborate 'pattern' of related parts or items, in definite 'organization.

The additive concept of development has been subjected to most severe attack by biologists who hold the organismic point of view and by psychologists who hold the configuration point of liew. Wheeler expresses the point of view of these groups toward piecemeal learning.

> The inductive bias assumes knowledge to be built up piecemeal from so much experience here and so much there. The bits are put together. The school curriculum is based upon this thesis from the kindergarden to the graduate school. Separate courses ; separate skills. Now we know that knowledge accumulates in no such fashion and that, for the most part, individuals become educated, in spite of, rather than because of, formal efforts to integrate these isolated scraps of knowledge into a single whole, the individual mind.

Thus, when the teacher undertakes to achieve a small part of an aim in the first grade, which is to be added to specifically in the second and so on, he overlooks many elements in the learning situation. Seeing the growth of the child as a simple process of addition, he overlooks a multitude of important factors in the intricate integrative process of modifying continuously the whole individual. He sees only ability a in a given learning situation, and only ability b in another learning situation, when abilities a and b and many others may all be involved. He deals with activies and subject matter as though abilities a and b only were involved. In brief, he strives to develop abilities in isolation when they develop in intricate relationships.

Thus, it is on the validity of this basic assumption of piecemeal learning that the aims procedure rests. If this assumption is accepted, the procedure may be considered essentially sound. If it is not acecepted, the procedure will not stand.

UNIT OF WORK PROCEDURE

The method of defining the scope of the curriculum to which astention is now turned is referred to as the unit of work procedure.

This procedure has been developed by public schools in an effort to follow the lead of experimental schools which have developed unit of work curricula. Whereas experimental schools generally permit the teacher to decide what units of work are appropriate in light of the particular situation he finds in his classrom, most public schools have been unwilling to trust their teachers to this extent. Yet they have wished to organize a unit of work curriculum.

In an effort to do this and still provide continuity, they have outlined in advance units of work to be taught, indicating the order and grades in which units are to be developed. A good illustration of the procedure is provided by the Denver course of study in "General Science and Earth Science," grades seven, eight, and nine.

GENERAL SCIENCE

Grade 7B

(3 periods per week)

Unit I. Air and Water. 36 lessons
Unit II. Weather and Climate. 18 lessons

Grade 7A

(2 periods per week)

Unit III. The Heavens. 18 lessons
Unit IV. Movement of the Earth. 6 lessons
Unit V. Changes in the Earth's Surface. 6 lessons
Unit VI. Geology of Denver and Vicinity. 6 lessons

Grade 8A

(5 periods per week)

Unit VII. Adaptation of Plants and Animals. 35 lessons
Unit VIII. Health. 20 lessons
Unit IX. Energy and Machines
Unit X. Magnetism and Electricity } 35 lessons

EARTH SCIENCE

Grade 9B

(3 periods per week)

Unit I. The Planet Earth and Its Evolution
Unit II. The Earth's Surface

Grade 9A

(3 periods per week)

Unit II. The Earth's Surface—Continued
Unit III. Earth Materials and Their Service to Man

The California state course of study in social studies for the elementary school also illlutrates this procedure.

Social Studies in the Primary grades

Unit I. The Home
Unit II. The Farm
Unit III. Community Life

Social Studies in the Fourth Grade

First Semester—Our California Home

Unit I. Water in California
Unit II. The First White Men Come to California
Unit III. Indians—The People the White Men Found Living in California
Unit IV. The Gold Rush
Unit V. California Today

Second Semester – Journeys in Distant Lands

Uuit I. Travel by Men : The Jungle Region of the Congo
Unit II. Travel by Beasts
  A. The Desert Regions of the Tigris, Euphrates, Nile
  B. Grasslands of Tigris, Euphrates, Nile ; The Oasis, The River Farming Region
  C. Cold Regions of the Northland by the Sea : Northern Norway, Lapland
Unit III. Travel by Train : The Po Valley, The Alpine Region
Unit IV. Travel by Boats
  A. Through Mediterranean Lands
  B. Through the Lowland of the Rhine
Unit V. Travel by Automobile : The Plain of France
Unit VI. Travel by Airplane : Seeing the Polar Regions
  A. The South Pole
  B. The North Pole
  C. The Story of Byrd's Flight

Social Studies in the Fifth Grade

Unit I. How the Old World Came to Find the New
Unit II. Peopling the New World
Unit III, A New Nation in the New World
Unit IV. How the Pathfinders Opened the Way Westward to the Pacific
Unit V. How Invention Has Changed Our Way of Living
Unit VI. How the Nation Was Nearly Destroyed
Unit VII. How the United States Became Really United in Spirit
Unit VIII. Why Our Country Is a Good Place in Which to Live
Unit IX. Our Neighbors, North and South

Social Studies in the Sixth Grade

Unit I. What We Owe to Southeastern Asia, the Cradle of the Race
Unit II. What We Learn from the Excavations of Egypt
Unit III. What Heritage the "Glory that Was Greece" Has Given Us
Unit IV. What the People Who Lived in Italy Have Done for Us
Unit. V. What the Orient (China. Japan, and India) Has Contributed to the Occident
Unit VI. How the People Lived in the Middle Ages and How the Nations of Central and Southern Europe Rose
Unit VII. United Kingdom, Our Motherland—England, Scotland, Wales, and Ireland
Unit VIII. The Sea-going Norsemen-- Norway, Denmark
Unit IX. The Thrifty "Low Countries"—Holland and Belgium
Unit X. Russia, the Land of Travail.

An examination of both courses of study and textbooks, which outline the scope of work in terms of pre-selected units of work, shows that they represent a reorganization of subject matter. The center of organization is broadened to major topics. These topics may or may not represent definite segments of a recognized logically organized subject field. The Industrial Revolution, for example is a topic generally treated in logically organized history and continues to find a place in scope of work as a prescribed unit of work.

On the other hand, it would be difficult to find some units included by this method represented in organized subject fields. Often, however, there is striking similarity between the major topics treated by better texts organized in the traditional way and the units of work in texts organized on the unit basis. For example, the following titles are from a text organized by units of work and from another text not organized by units.

Units of Work in Text A

1. Europeans Find the Red Man's Continent.
2. Europeans Settle in the New World.
3. The Struggle for the Red Man's Continent.
4. America's First Steps Toward Democracy.
5. Life in the New States and the Great Westward Movement.
6. The Industrial Revolution in America.
7. The Northern Industrial Zone Versus the Cotton Kingdom.
8. The Age of Big Business : 1865-1914.
9. The Industrial Revolution and the Worker:
10. American Foreign Expansion and the Era of Prosperity.

Parts of Text B

1. The Colonial Period.

2. Conflict and Independence.
3. The Union and National Life.
4. The West and Jacksonian Democracy.
5. Democracy and Conflict.
6. National Growth and World Politics.
7. Progressive Democracy and Foreign Relations.

The unit of work procedure is like the subject matter procedure in that scope of work is outlined in terms of phases of the group culture to be treated. It differs from the subject matter procedure in three particulars. First, the phases of culture are larger than in the subject matter procedure ; second, pupils' interests may be considered in selecting units of work ; third, logically organized subject matter is not required.

These differences provide greatly increased flexibility for the teacher. Since it becomes necessary for the teacher to deal with larger topics than is required by the subject matter or textbook procedure, he must organize for particular teaching situations the materials related to these topics. It gives opportunity to employ matterials from various subjects and various chronlogical periods. Thus, although the prescribed unit does indicate bodies of subject matter or culture areas with which the teacher must deal, it permits considerable freedom within these areas.

There is, however, nothing in prescribed units to necessitate a materially different type of classroom instruction than is required by the textbook procedure. For example, a popular unit of work of the prescribed type is one on Holland. It seems probable that it would make relatively little difference to many teachers whether they are told to teach Holland as a unit of work or as a major topic in geography and history.

To summarize, the organization of scope around prescribed units of work may be characterized as a development of a larger topical organization of subject matter which may be very much more flexible than the textbook procedure, but which has in it possibilities of becoming just as rigid as the previously employed smaller units of subject matter.

THEME PROCEDURE

The general plan of the theme procedure is to organize the curriculum around certain of the most important generalizations employed by adults in interpreting contemporary life. This procedure has been employed exclusively in defining the scope of the social studies curriculum. It is based on work by Billings who studied the generalizations basic to the social studies.

He suggests that the numerous generalizations in social studies may be classified under certain broad concepts which he refers to as themes. He suggests also that the subject matter of social studies can be conveniently centered and organized around these tnemes and that the themes thus will greatly aid the curriculum maker "in perfecting the organization and bringing about the unity of the courses he prepares." This suggestion has been followed in certain curriculum work and the scope of the curriculum in social studies has been determined by themes.

The general procedure is to select themes, usually a rather limited number which are to control the social studies program. This is followed by indicating on each grade level the aspects of the various themes that are to be treated. These aspects are then mode the major point of reference in selecting activities and subject matter.

An illustrations of the way in which the theme procedure operates is provided by the South Dakota course of study in social studies, in which the procedure is applied with care. Concerning themes basic to the program, the following statement is made :

THEMES BASIC TO THE PROGRAM

> The themes or generalizations used in this program are few in number but they represent those most fundamental

ones that the adult mind uses constantly in interperting contemporary life. Because these themes are abstract and difficult they are presented through a definite body of material that is adapted to the pupul's level of interest and experience and is considered suitable for the development of the theme idea. These ideas or themes need to be presenteed many times but always through new fresh materials. For this reason only a limited number can be developed in the elementary school. This program groups all the materials of the social studies around the following five themes, each of which is variously stated to represent its different aspects and each of which is developed through different units written on different grade levels. The themes used are as follows :

The Interdependence Theme
Man's Increasing Control Over Nature Theme
The Adaptation Theme
The Population Theme
The Democracy Theme

The way in which these themes are allocated to grade levels is shown in Chart II.

After aspects of themes are stated for the grade, instructional materials are canvassed to discover those suitable for developing the several aspects of themes. On the basis of this canvass, units of work are prescribed for each grade. The prescribed units are referred to as course of study units and teachers are directed to develop their own teaching units.

This overcomes, in part at least, the objections to prescribed units. In some programs other than South Dakota the units prescribed to develop particular themes appear to be intended as teaching units. In these latter cases, of course, the theme procedure is subject to the same criticisms as the prescribed unit procedure.

There are a number of points about this procedure which merit attention. In the first place, there appears to be some

CHART II

Scope of the South Dakota state Program in Social Studies

Themes Controlling the Social Studies Program	*Gra'e I*	*Grade II*	*Grade III*	*Grade IV*	*Grade V*	*Grade VI*	*Grnde VII*	*Grade VIII*
	Aspects of the Theme to be Developed	Aspects of the Theme to be Developed	Aspects of the Theme to be Developed	Aspects of the Theme to be Developed	Aspects of the Theme to be Developed	Aspects of the Theme to be Developed	Aaspects of the Theme to be Developed	Aspects of the Theme to be Developed
The Increasing Interdependence of Groups of People.	The Inerdependence of the Members of a Family Group.	The Interdependence of the Family and Community	The Increasing Interdependence of Different Groups of the Com-	The Increasing Interdependence of Communities and the World at	The Increasing Interdependence of Family and Local Community.	The Increasing Interdedendence of Communities and the World	The Increasing Interdependence Communities and the World at	The Increasing Interdependence Communities and the World at

	The Interdependence of the Family and Farm Workers.	Workers A. A Study of the Rural Family. B. A Stmdy of the Town Family.	munity.	Large.		Large.	Large.	Large.
The Necessity of Man's Adaptation to Meet the Requirements of Subsistence, the Pressure of Competing Groups and the Conditions Implicit in Change			The Physical Environment Tends to Determine the Modes of Living. Pioneers Adapt Themselves to	The Tendency of the Physical Environment to Determine Modes Living and Man's Relation to the Sun. Land Forms Surface Features.	The Tendency of the Physical Environment to Determine the Industries of the People.	The Tendency of the Physical Environment to Determine the Induatries, of the People.	The Pressure of Competing Nations Brings Adaptation to Changing Conditions. Failure to Adapt Themselves to Changing Conditions Resuits in Conquests, Absorption or Trans-	The Pressure of Competing Nations Brings Adaptation to Changing Conditions. The Pressure of Competing Groups Brings the Necessity for Change.

1	2	3	4	5	6
	Conditions.			fromation of People or Nations.	
Man s Increasing Control over Natt.e	Man's Early Control of the Soil. How Man has Learned to Control Nature through Use of the Sea. Contrnl over Nature Gives Leisure for Culture.	Making Available the Natural Resources of the Earth. Man's Control over Nature through the Application of Scientific Knowledge and Method.	Improving the Standard of Living by Making Available the Resources of the Earth. Man's Control over Nature through the Application of	Controlling Nature through the Use of Fire, Water, Metals, Animals, and the Soil. Man's Control over Nature through the Application of Scientific Knowledge and Method.	Man has increased His Control over Nathre by the Application of Scientiffc. Knowledge and Method. The Control of Nature through the Application of Scientific Knowledge and Method.

						Scientific Knowledge and Method.		
Man's Tendency to Move From Place to Place in Quest of a Higher Standard of Living				The Tendency of Simple Independent People to Wander About without Definite Destination.	The Tendency of Established People to Migrate with Definite Destinations in Mind. The Tendency of People to Migrate with Definite Destinations in Mind	The Tendency of People to Migrate with Definite Destinations in Mind.	The Tendency of Nations to Evpand Their Boundaries.	The Tendency of Nations to Expand Their Boundaries.
The Inevitable Progress of Democracy					The Tendency of People to Demand Political Democracy.	The Tendency of People to Strive to Keep Political Democracy.	The Tendency of People to Demand Political Democracy.	

confusion between themes and aims of education. In some cases the same generalization is stated both as an aim and as a theme, For example, one general objective stated in the South Dakota course of study is "To Develop an Understanding of Interdependence Plus a Feeling of Membership in the World Community."

One of the themes, it will be noted, is "The Increasing Interdependence of Groups of People." This makes it appear that themes and objectives are essentially the same. Yet, both themes and objectives are given. When the units of work are organized, the heading includes the *theme*, *theme aspect*, *generalizations*, and *objectives.*

A further problem is encountered in the allocation of themes to the respective grades. Grades one and two, for example, are supposed to deal only with one theme, while grade three deals only with two themes. The assumption is that in the South Dakota social studies course the entire work of grades one and two is for the purpose of developing the theme, "The Increasing Interdependence of Groups of People."

Yet examination of the work outlined for the first and second grades indicates that the beginning of the development of a number of basic generalizations would be required in addition to the one on interdependence. When units of work are prescribed to develop particular themes this becomes clearer. For example, in the scope of the curriculum of the Houston, Texas, schools, which is developed on the theme procedure, a unit of work in grade four – Life in Ancient Greece and Rome— is to develop the "Control over Nature" theme. This unit is assigned six weeks. It seems obvious that generalizations not related to this theme and of equal or greater importance than those related to it would be required to develop this unit of work.

This plan assumes that work can be organized to develop directly particular basic generalizations or classified groups of generalization can dominate work for long periods of time. This is extremely doubtful. In fact, it has become increasingly clear that it is a mistake to permit a particular aim, whether it be a generalization or a specific ability, to pre-empt the attention of the teacher for a long period of time.

Every learning situation involves so many abilities that it is only for short periods of time, and then in relationship to a larger general context, that instruction may safely be devoted to particular abilities, whether they be important generalizations or specific habits. Learning situations which result in the development of a significant generalization may more appropriately be related to a pattern of abilities than to a single one. In brief, the theme approach falls into the same difficulty that is inherent in the aims procedure. It assumes the overwhelming predominance in instruction of a major generalization or aim for long periods of time.

A further difficulty is evidenced by the lack of relationship between the various aspects of themes in a particular grade. Consider for example, the material in grade four of the South Dakota outline. The first aspect of the work of the grade deals with "The Increasing Interdependence of Communities and the World at Large". The second aspect is "The Tendency of the Physical Environment to Determine Modes of Living and Man's Relation to the Sun," "Land Forms," and "Surface Features"; third, "Man's Early Control of the Soil," and "Control Over Nature Gives Leisure for Culture"; and fourth, "The Tendency of Simple People to Wander About Without Definite Destination." Definite time allotments to these four divisions of the work of the grade are made. The first one is allotted six weeks, the second eighteen weeks, the third nine weeks, and the fourth three weeks; yet, if there is any tendency for one of these divisions to grow into the subsequent division, this tendency is extremely difficult to discover. In fact, it appears that this vertical relationship does not receive consideration. Yet it cannot be denied that provision for this relationship is one of the very important requirements for the smooth, continuous movement of pupils through their work.

Another difficulty is encountered when the units of work based on these aspects of themes are examined. Even when course of study units only are prescribed and the teacher is directed to feel free to develop teaching units within course of study units in terms of the needs of particular situations, frequently the limitations are rather narrow. For example, consider the Houston fourth-grade outline of units :

Low Fourth Grade

Unit I. Living in Temperate Lowland—Holland
Unit II. Living in Mountainous Region—Switzerland
Unit III. Living in an Insular Region—Japan

High Fourth Grade

Unit I. Life in Ancient Egypt and Mesopotamia
Unit II. Life in Ancient Phoenicia and Palestine
Unit III. Life in Ancient Greece and Rome

These unit titles are not dissimilar to the usual list of topics that might be encountered in the grade if the textbook method of outlining scope were employed. Topics in the South Dakota course, such as, "Colonial Life," The English Colonies of America Demand Political Democracy—The American Revolution," "South Dakota History and Geography," "The Economic and Political Development of the People of the United States," also sound very much like the scope of work provided by the subject matter procedure.

There appears to be nothing in this procedure which necessitates the inclusion in the curriculum of new industrial, scientific, economic, political, and social materials. It seems possible to apply the procedure with care and thoroughness without noticeably influencing the scope of work. Either the traditional curriculum organization is much less faulty than is currently held or this procedure is an inadequate means of discovering needed changes.

CENTER OF INTEREST PROCEDURE

The center of interest procedure places the emphasis on the interests of children. An effort is made through study of child interests to discover within what large phases of culture their interests tend to lead them. Interests, as is pointed out in the following chapter, may be indicated in terms of objects or activities. Both objects and activities tend to group themselves in terms of various classifications of the group culture. Grouping may be in terms of social institutions, functions, ideals, or personal or group undertakings.

These groupings may be called culture areas and, being areas which include activities and objects in which certain individuals are interested, they become for those individuals *centers of interest*. Thus, a center of interest is a phase of the group culture within which a variety of activities of objects of interest may be classified.

As the centers of interest of children on various levels are discovered, these phases of the group culture are allocated to grades. On the respective grade levels they serve to delimit the work of the grades.

This procedure is seldom applied alone but is usually combined in some way with another procedure. Even when an effort is made to apply it strictly, a great deal of difficulty is encountered in discovering enough data on which to develop a comprehensive outline of scope. As a result there is a tendency to fall back on traditional organizations, especially in upper grades.

The San Antonio course of study in social studies illustrates this procedure in the lower grades. One of the principles set forth in this course is as follows :

Child Interest as the Basis for the New Educational Program

The school is setting up a program of work which has a personal connection with the immediate life of the child. It starts from his needs and interests and organizes its program around centers of interest rather than around academic subjects, except where life needs coincide with the school subjects.

The scope of work follows :

Low First

The child's games, pets, and toys.

High First

Home life in the city and on the farm.

Low Second

The community in relation to the home.

High Second

Child life in other lands.

Low Third

Primitive life.

High Third

San Antonio, past and resent.

Low Fourth

Geogrophy and history of Texas.

High Fourth

World explorer connected with United States history, and geography of the countsies that sent explorers and of the countries explored.

Low Fifth

Geography of the United States and history of the United States, beginning with colonization.

High Fifth

Interdependence of the nations of the world in trade, health, and culture.

Whether one is willing to employ this procedure for outlining scope of work depends upon the emphasis given to pupil interest. If pupil interest is considered the one and only requirement for the study of a phase of culture, this procedure may be considered satisfactory.

SOCIAL FUNCTIONS PROCEDURE

A recently developed means of defining the scope of the curriculum may be referred to as the social functions procedure.

This procedure is based on the assumption that the activities of children in school should be organized in such a way as to carry over with greatest ease to real life situations.

This concept of organization of instructional program suggests that the school program should provide in so far as possible for children to gain an increasing understanding of the issues and problems encountered outside the school, should aid them in developing desirable controls of conduct that operate in meeting such issues and problems, and should given them opportunity to participate extensively in such real situations.

This procedure further assumes that an adequate program of education will provide for the introduction of the child to all of the important areas of activity in real life and will provide for his gradual induction into participation in these activities.

Study of group life shows that there are certain major centers about which the activities of individuals and the plans problems of the group tend to cluster. These centers, which may be referred to as social functions, tend to persist and to be common for all organized groups. For example, ceriain of the activities of primitive tribes tended to center around protection of the lives and property of the group. In group life today protection of life and property continues to be an important function about which many activities cluster and from which a group of related problems and issues arise.

Since these centers or social functions represent points about which real life activities tend to gather and organize, it is considered reasonable that a curriculum which is concerned with guiding children into effective particiption in the activities of real life may appropriately use these functions as points for emphasis and orientation in outlining the curriculum.

As the individual develops an understanding of discharge these functions in the past, and of the problems of the present ; as he develops ability to anticipate somewhat the problems of the future, and actually participates in the discharge of the functions in the present ; he will become an effective member of the social group, participating intelligently in the many activities required of him.

It is concluded, therefore, that the curriculum should be organized so as to emphasize the major functions of group life. It is believed that mere contact or acquaintance with phases of culture will not provide this emphasis. The relationship of knowledge, facts, and principles to social functions must be established by the school rather than left to chance.

The procedure is also based on the assumption that work in subjects should contribute to the development of an integrated program of education. This does not mean that abilities organized for effective use into subject fileds should not be so organized, but it does mean that a core should be provided for the curriculum so that all subjects may contribute to integrating experiences of children.

It follows from this assumption that there will not be different scopes of work for the various subjects, for example, one scope of work in science, another unrelated one in geography, another in history, and another in language arts ; but one scope of work to which materials from all fileds may contribute. It is assumed that this core should extend throughout the school life of the child. Adminstrative organization, departmentalization and methods of promotion should not be permitted to interfere with the development of such a unifying core.

A further assumption upon which the procedure rests is that the scope of work for given groups of children should be planned so that the work will grow out of their interests. This, it is held, guarantees effective and economical learning. It follows from this assumption that pupil interest should be one determinant of the scope of work on the respective grade levels.

Use of this procedure requires three analyses. First, the various functions of social life are canvassed. From this list functions that serve in a major way as unifying forces of action in group life are selected to serve as points of emphasis in outlining the scope of the curriculum.

Functions vary in one respect that may at first thought appear to condition their importance and influence selection, but which upon further reflection is seen not to do so. Some functions require a great deal more organized group action for their discharge than do others.

The one mentioned previously, for example, the protection of life and property, requires elaborate social organization in the form of fire and police departments, courts, hospitals, and other such agencies. The activities of these organized agencies are outstanding in discharge of the function, while the self-directed activities of individuals appear to play a much less important part.

On the other hand, some functions require a predominate proportion of self-directed activities by individuals rather than organized group activity. For example, the expression and enjoyment of aesthtic impulses are such fundamental human needs that practically all organized social groups have made some provision for such enjoyment and expression.

To make such provision and to prepare individuals to participate effectively in the activities involved may be considered a fundamental function of society. Activities involved in discharge of this function are genernlly self-directed activities of individuals. This does not detract, however, from the importance of making social provision for members of the group to enjoy and express themselves aesthetically. Thus, the term, social, is used in a broad sense to include those functions recognized as important by the group, whether they be discharged largely through organized action of the society or by self-directed individual action.

The major social functions, as selected, are employed to determine desirable points of emphasis for work through the curriculum. A list of the functions selected in one curriculum program may be found in the first column of Chart III.

The second analysis is to discover what forces influence the discharge of social functions. It is through consideration of these forces that the child will come really to understand a particular social function ; for example, how such forces as the westward movement, the development of machine technology, and social change have operated to condition materially the way in which society discharges its respective functions. Growth in understanding of contemporary life and in ability to contribute to social development depends upon the individual's ability to discover and understand how such forces influence the discharge of the functions of group living.

The third analysis relates to the interests, abilities, and needs of children on the respective grade level. This is for the purpose of discovering upon what grade levels the various forces, indicated in the analysis described above, may be dealt with appropriately. Careful study is required of the characteristics of children on the various grade levels to determine the phases of group culture in which their interests may lead them and which their abilities make them able to deal with advantageously.

With the data from the third analysis in hand, the major forces discovered in the second analysis are allocated to grade levels an general limitations for the grade. They may be referred to appropriately as "centers of interest" since interests of children are employed to place then on grade levels. These major limitations are them applied to the functional phases of social life. The resulting statements are called aspects of the centre of interest. The aspects to be emphasized on the respective grade levels are then selected. In making this selection care is exercised to see that :

(a) Growth in understonding of the functional phases of social life is planned from grade to grade ;

(b) Materials are available for use of the children in dealing with the aspect of the center of interests ;

(c) Children on the given level are of sufficient maturity to grasp the concepts required to deal with the aspect.

An illustration of the use of this procedure is provided by the Virginia state course of study as shown in Chart III. It will be noted that provision is made for both horizontal and vertical relationships ; that is, points for emphasis within a grade are related to each other because they all develop from the same center of interest, and the work grade to grade is related through the social functions.

It will be noted further that is particular social functions are omitted, the omission is intentional. Frequently this has not been true in the past. For example, little attention has been given to education as a social function in a democracy. Treatment of this social function has been accidental and no provision has been made for a growing understonding and appreciation of the place of education in group living. The shaken faith of America in education no doubt is due to considerable extent to this lack of attention. With the social functions procedure of outlining scope, such functions cannot unintentionally be omitted.

It will also be observed that this method requires the organisation of instruction around points of contemporary significance. The plans and methods of improving group living become the core of the educational program. This is in direct contrast to certain methods in which the assumption appears to be that mere contact with phases of the group culture is sufficient guarantee of an understanding of contemporary.

The dynamic quality of the organization provided by this procedure necessitates the use of never social, scientific, economic, and political materials, as well as the older basic materials. This difference becomes especially obvious as the work beyond grades one and two is considered. For example, traditional topics, such as, Indian life, Eskimo life, American Revolution, and the Industrial Revolution, have been supplanted by issues as direct relationship to contemporary life. Many of these issues, of course, require for satisfactory treatment the subject matter suggested by the foregoing topics, but this subject matter becomes a means to the end of understanding the plans and methods of our own group life.

CHART III

Scope of Work in the Core Curriculum for Virginia Public Schools

*Major Functions of School Life**	*Grade I* *Home and School Life* *(Center of Interest)* *Aspects Selected for Emphasis*
Protection and Conservation of Life, Property, and Natural Resources.	How do we protect and maintain life and health in our home and school ?
Production of Goods and Services and Distribution of the Returns of Production	How do the things we make and grow help us ?
Consumption of Goods and Services	How does our family provide itself with food, clothing, and shelter ?
Communication and Transportation of Goods and People	How do members of our family from place to place ?
Recreation	How can we have an enjoyable time at home and school ?
Expression of Aesthetic Impulses	What can we do to make our home and school more beautiful and pleasant ?

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*The order in which the major social functions and the aspects of the centers of interest for each grade are presented

Expression of Religious Impulses
Education
Extension of Freedom
Integration of the Individual
Exploration

has no particular significance.

How do we in the community protect our life, health, and property ? How do animal and plant life help people in our community and how are they protected ?	How do people, plants, and animals in communities with physical environment markedly different from ours protect themselves from forces of nature ?
What do we do in our community to produces goods and services ?	How do environmental forces of nature affect the goods produced in different communities ?
How do we use the goods and services provided in our community ?	Why can communities markedly different from ours furnish us with goods we cannot produce ?
How does our community provide for transporation and communication ?	How does physical environment affect transporation and communication ?
How does our community provide for recreation ?	How does the physical environment influence types of recreation ?
What do we do to make our community attractive ?	How do people in communities markedly different from ours express their artistic impluses ?
	How do people in different communities express their religious tendencies ?
	How do people in diffe-

	rent communities provide education ?
How does frontier living affect the protection of, life, property, and natural resources ?	How do inventions and discoveries alter our ways of protecting and conserving life, property, and natural resources ?
How does frontier living modify and how has it been modified by the production and distribution of goods and services ?	How do inventions and discoveries affect the variety and availability of goods ?
How does frontier living restrict the consumption of goods and services ?	How is the consumption of goods and services influenced by discoveries and inventions ?
How do ways of transporatation serve to advance frontiers ?	How do inventions and discoveries improve our means of transportation and communication ?
How is recreation influenced frontier living ?	How do inventions and discoveries influenc recreation ?
How are music, literature, and art affected by frontier living ?	How do inventions and discoveries affect our art, music, and literature ?
How is religion affected by frontier living ?	How do discoveries influence the spread of religion ?
How is education influenced by frontier living ?	How do invention and discoveries influence education ?
How does machine production lead to the conservation and to the waste of life,	How do social and governmental agencies protect and conserve life, property,

property, and natural resources ?	and natural resources ?
How does machine production increase the quantity and variety and change the quality of goods ?	Why are governmental monopolies established for the provision of certain services ?
How does machine production of standardized goods influence the choice and use of goods ?	How do social agencies influence the consumer in his choice and use of goods ?
How does machine production affect transportation and communication ?	How do methods of transportation and communication affect co-operative living ?
How does machine production influence recreation ?	How are social and governmental organizations extending opportunities for the wise use of leisure time ?
How does machine production modify art, literature, music, and architecture?	How do social organizations provide opportunities for expression of aesthetic impulses ?
How does machine production influence the development of the church ?	How does the church fuction as a means of social control ?
How does machine production influence education ?	How does education function as a means of social control ?
How and why do nature and agencies resulting from invention and discovery affect the protection and conservation of life ann property ?	How and why does the change from an agarian to an industrial order affect the use and conservation of natural resources ?

How does man depend upon plant life, animal life, and minerals, and how do inventions and biological discoveries increase man's use and control of nature ?	How does the change from an agarian to an industrial society affect the production and distribution of goods and services ?
How do inventions and discoveries affect the well-being of the consumer ?	How and why do standards of living very in agarian and industrialized societies ?
How do improved means of communication influence the behavior of individual and groups ?	How does the application of power and modern business enterprise to transportation modify our living and thinking ?
How does man adopt his play to the character of the society in which he lives ?	How can recreation lend significance and beauty to the common activities of life in modern society ?
How do man's natural environment and his inventions provide worth-while opportunities for the cultivation of aesthetic appreciation?	How do agarian and industrialism influence the development of our artistic resources and the adjustment of all individuals to their use ?
How does man manifest his religious impulses through social invetions ?	How do religious organization influence living in agrarian and industrial societies ?
How does the home utilize social invention in the early development of standards of value in the child ?	How does the American system of education contribute to the development of the ideas of democracy in our industrialized life ?
How and why are men	How and why does the

denied the freedom which social and inventions make and mechanical inventions make possible ?	struggle for attaining the democratic ideal modify industrialism and agrarianism ?
How can physical development and social controls promote the integration of the individual and avoid conflicts ?	How can an industrialized society provide for realization of individual ideals and ambitions ?
How does man's conquest of nature aided by the spirit of adventure lead to geographic exploration and commercial expansion ?	How does the spirit of pioneering influence the development of equality of opporunity both in an agrarian and in an industrial setting ?
Why is advancement in the protection and conservation of life and property essential in a changing society and how can it be achieved ?	How can nations through social planning guarantee to all the protection of life, property, and natural resources ?
How can we improve production, establish an economic balance between production and consumption, and provide for a more equitable distribution of the returns of production ?	How can nations plan for the establishment of proper economic interdependence by appearing the production of goods and services and by distributing these more equitably to the consumer ?
How does the advancement to science affect the thinking and the welfare of consumer ?	Used above
How do improved means transportation and communication influence changing cultures and affect relations between nations and people ?	How can modern means of transportation and communication be utilized to enhance the social welfare of nations and people ?

How may changing ideas lead to the elimination of undesirable phases of commercialized recreation and promote creative recreation ?	How can a planning society utilize increasing leisure time to develop recreation as a creative agency for everybody ?
How do culture areas and changing social institutions influence the development of the fine arts ?	How can a planning society improve the quality of living for all by utilizing man's desire for beauty ?
How does a changing culture affect the church as an agency of social control ?	How can religion in a planning society give stability to personality, and foster ethical business practices ?
How and why does individual and social adaptation to a changing culture make necessary constantly changing emphasis in education ?	How shall social groups plan to provide for their preservation and reconstruction through education ?
How do changing culture and social institutions make necessary a changing concept of freedom ?	How can a planning society extend political, economic, intellectual, and social freedom to all people ?
How can the individual maintain mental poise in a rapidly changing culture ?	How can opportunity for the intergration of the individual in a modern social order be provided through organized means ?
How do changes in culture result from social and intellectual pioneering ?	How can we plan to advance human welfare and eliminate the defects of the present social order by scientific modes of thought ?

Tentative Course of Study for Virginia Elementary Schools. Grades I-VIII. State Board of Education, 1934, pp. 16-19.

This procedure encounters the difficulty of not having adequate materials available for the use of children to carry forward the study of a number of the aspects of centers of interest selected for emphasis. Until such materials are made available, work dealing with these aspects will of necessity be limited. Also, much greater familiarity with contemporary life is required than most teachers possess. Furthermore, many teachers, as now trained, do not have adequate background in the content subjects to deal with many aspects of centers of interest included in an outline as the one in the Virginia course of study.

This procedure is also subject to the criticism that it places too much emphasis on the social phases of education and too little on the individual appreciative and creative phases. It may have this result unless the term social is used in the broad sense of group living, and purposes realized either through organized or unorganized social means are included in the analyses. When this interpretation is made, this criticism is less valid.

CRITERIA FOR EVALUATING PROCEDURES FOR DEFINING SCOPE

Evaluation of procedures for defining scope of work is complicated by the controversial issues involved. No criteria can be set up to which general agreement can be secured. However, the writers present four criteria that appear to them to be sound.

1. Provision should be made for the consecutive, cumulative movement of children through the curriculum

In the statement by Dewey, presented at the opening of the chapter, the point is clearly made that it is unwise to permit chance incidents to dictate the general movement of pupil activities. Such incidents may be of value from time to time, but the general course cannot rest upon chance, for such a basis is apt to result in disconnected and disjointed movement rather than in smooth, cumulative growth. A satisfactory method of outlining the scope of the curriculum must assure smoothness of movement and relationship of activities. This requires that general areas be indicated through which the growth of children may advisedly proceed.

Statement of the problem implied by this criterion in question form may help clarify its application : Within what areas may children of various levels of maturity and with various general backgrounds most profitably be guided ? When experiences of children have been principally within certain culture areas, what new areas will probably yield richest experiences ? These questions suggest that the consecutive, cumulative movement required by this criterion will be found through study of the growth of children rather than through independent study of phases of culture.

2. Freedom should be allowed for the teacher to organize instruction around purposeful experiences of children of varying capacities and abilities

In the following chapter the importance of pupil purpose is discussed. One of the major responsibilities of teachers in directing instruction is to guide pupils in the formulation of worthy purposes. Scope of work can be so restrictive that a teacher finds this an impossible task.

This criterion guards against narrow limitations which restrict unduly the development of children with various types of abilities. Educational outcomes depend to such a large extent on the richness of activities in which children have opportunity to engage, and progressive development so depends on interests fostered, that any plan of organization which unduly restricts individual pupil adjustments defeats the ends of education.

In application, the criterion requires that the culture areas which serve to delimit the work of a particular group of children be so broad that their interests will touch a sufficient number of points to provide a variety of activities and a basis for developing worthy purposes. It requires that the teacher have opportunity to select subject matter that will serve as a means to ends desirable for the particular pupils. Failure to observe this criterion leads to the organization of instruction around some point other than the needs and purposes of the learner, admits mechanical teaching, and encourages learning by memorization rather than by association.

3. The individual should be oriented to the aspects of the social life in which he must participate

In *The Educational Frontier* emphasis is given to the importance of seeking in the operation of social life the fundamental basis for orienting the education of an individual. Three statements are presented which bear on this point.

> ...conditions of the present social-economic situation... compel a course of study that uses as centers of orientation those aspects of the social life in which the student must inevitably participate.
>
> What is now needed is.. an orientation of the individual which cuts deeper than the surface of life...The immediate point of departure for the school is that host of activities which bring to the family, and thus to the individual, food, shelter, clothing, recreational opportunities, and the like.
>
> In a planning society, the plans and methods of maintaining and furthering the life of the community would form the natural core of the course of study.

The same general point was emphasized by Glenn Frank in an address given at a conference at the Century of Progress Exposition, in which he considered the needs and future of education. He stated :

> *First*, from one end of our school system to the other, we must rebuild our curricula around a spinal column of political, social, and economic studies which reduce to utter simplicity and intelligibility the plain principles of organization and operation that must govern the work of an age science and technology if its magnificent mecha-

> nism for producing abundance is to serve instead of sink us. These studies must be organized, not in terms of traditional academic objectives, but for the avowed social purpose of training a generation of citizens to play a productive role in the creation, comprehension, and control of a workable social and economic order in an age of plenty.

Application of this criterion requires that scope of work provide an organization which contributes in a fundamental way to the understanding of contemporary life and to effective participation in its many activities. It holds as unsound the assumption, so often dominant when the scope of the curriculum is outlined, that specialization in particular subjects is the primary concern in common school education. It implies rather that first consideration should be given to relationships of activities and subject matter to plans, problems, and methods of carrying on and improving the functions served by group living.

4. A core around which materials from the various subjects may be organized should be provided for the entire period of school attendance

Usually the scope of the curriculum is so organized that work in a large number of subjects is pursued independently. Materials in one course in no way supplement materials in other courses. This failure to establish relationships between the various subjects limits the fundamental understandings developed by the child. The result tends to be the acquisition of facts in relative isolation. An adequate definition of scope of work provides a core organization to which the various subject can contribute. It eliminates the procedure whereby each subject is a wholly independent entity. It makes possible the development of an educational program for the child in which facts and principles from all fields may be related and brought to bear as need arises on problems and issue.

Not only would real integration of subject matter thus be achieved, but by defining scope for the entire period of the school life of the child without regard to various phases of administrative organization, the disintegrating influence of particular types of school organization would be obviated. In other words, the entire body of culture, the growing child, and aspects of social life in which the individual must participate should be the elements involved in determining the scope of the curriculum.

ELECTS OF PROCEDURES FOR DEFINING SCOPE ON THE INSTRUCTIONAL PROGRAM

The test, of course, of various procedures for determining scope of work is the way in which they influence the instructional program. In a great many cases, curriculum programs have set up elaborate procedures and have come out in the end with essentially the same curriculum organization and materials with which they started. This is especially true of the definition of work. In numerous curriculum programs, much oratory and many heated discussions have been devoted to the new demands on education and to the inadequacies of the present instruction program.

But when the curriculum program is over, more often than not, essentially the same instructional program remains. Examination of curriculum materials leads one to believe that it is not an uncommon practice for curriculum committees to work backwards from the answer they now have through the new procedure rather than to follow a procedure considered sound to its logical conclusion. In dealing with scope of work, this appears to be equally true of both "so-called" traditionalists and progressives. As curriculum committees meet, the one asks, "Where are Old World Background and Colonial Life coming in ?" and the other asks, "Where can we include Indian Life and Transportation ?"

There is pressing need for curriculum making programs to canvass carefully all methods of determining the scope of the curriculum adopt the method which appears to be soundest, and follow it consistently. Then there will be less of a tendency for educational orators to get the table set for a new dish in education only to turn up in the end with the same old food slightly rehashed and warmed over.

All things considered, there is no phase of curriculum making that has received less careful attention than the matter of defining scope of work. Individual curriculum programs often do not follow a uniform method. Even within a particular subject variation occur. Careful study of this phase of curriculum making by curriculum committees and agreement on an acceptable procedure will do a great deal to eliminate confusion in the development of curriculum programs.

7

Criticism of Secondary School Curricula in ancient, Medieval and Modern Times

Three phases of the procedure of curriculum development have been treated thus far : the discovery and clarificatiion of principles basic to curriculum development, the statement of education, and the determination of the scope of the curriculum.

The statement of principles provides general guides to be followed in subsequent phases of the work in order that a consistent program may be developed. The statement of aims of education indicates the direction in which it is socially desirable for the growth of children to proceed. The outline of scope indicates general areas of culture through which growth of children may advisedly be guided from year to year. Attention is turned in this chapter to the purposes of pupils and the consideration these purposes should receive in curriculum development.

DOMINATION PHILOSOPHY OF EDUCATION EMPHASIZES PURPOSE

The importance of purpose in learning has been emphasized by the philosophy of experimentalism, the school of thought that has influenced to a far greater extent than any other the development of American education during the present century. Purpose is looked upon as that characteristic of experience which serves the general function of organizing, vitalizing, and relating the activities in which people engage and the objects with which they deal.

It is the operation of purpose through activities which makes the difference between a mere series or sequence of acts and a "progressive co-ordination" of acts as means to an end. Activities and objects take on unity and meaning as they are related to particular ends or purposes an individual is endeavoring to realize. "The developing course of action," states Dewey, "whose end conditions are perceived, is the unity which holds together what are often divided into an independent mind on one side and an independent world of objects and facts on the other."

This fundamental characteristic which purposes impart to experience makes them of utmost importance in the educative process, inasmuch as the meanings and ideas that children develop are thus significantly conditioned by the purposes which actuate activity.

When pupil purposes are ignored and the fundamental quality which good purposes impart to activities are lacking, highly mechanical procedures in instruction result. In such cases children do not have an intrinsic reason or purpose for engaging in many of the activities required of them. Activities are thus separated from purpose, and, as Dewey point out " . . . isolation of an act from a purpose . . . makes it mechanical."

The child in this case has no adequate basis upon which to judge the appropriateness of activities and can engage in them only as he is specifically directed to do. He is not permitted to grow in abiiity to make decisions and choices and the aims of education are thus not realized.

The point of view of experimentalism on purpose is summarized by Childs as follows :

> . . . man lives in a world in which the character of existence is such that intelligent, purposeful activity is demanded if he is to achieve a satisfying experience. In the second place, the experimentalist also believes that the nature of experience is such that the necessary condition for learning to behave intelligently is the freedom to engage in purposeful activity. By purposeful activity is not meant mere random activity in response to fleeting impulse. Purposeful activity is controlled experimental activity. But the primary controls inhere in the subject matter of the situation of concern rather than in externally imposed influences. Purposeful activity is activity freely initiated by the agent in response to a situation whose difficulties have a challenging grip in his present experience. He frames his ends in the light of the resources and difficulties found in the actual problematical situation.

PSYCHOLOGICAL BASIS OF PURPOSE

Psychologists have given a great deal of attention to the nature and function of purpose in behavior. On this matter there has been radical disagreement. Some psychologists have considered purpose the key to all behavior of the type usually described as conscious. Others, who have sought explanations for all aspects of behavior in physical structure, have rejected the concept in its entirety. For a time this latter group tended to dominate psychology. The result is described by Kilpatrick as

> . . . a psychology better fitted to describe the movement of rats than to guide the richer lives of men. Under its influence education—unless otherwise counteracted—has tended to reduce itself to such mechanical processes as habits, skills and other assignable procedures. More recently measurement as the willing handmaiden of the movement has attracted many, particularly in the United

States, by its promise of more efficient results. The actual result has been an even more desiccated dryness.

Recently, however, there has been a renewed interest on the part of psychologists in that type of behavior described by the term purposive. This has been encouraged by further analysis of laboratory findings and the resulting evidence of the inadequacy of the wholly mechanistic explanation of behavior, even in animals. The result is that psychologist are giving considerable attention again to studies of complete units of behauior rather than to isolated activities alone.

This development has been emphasized by Gestalt psychology which stresses the importance of "wholes" and that "parts" derive their characteristics from "wholes" rather than "wholes" being a summation of their various "parts." This point of view also emphasizes the concept of "insight" which involves the ability of an individual to select and organize activities in terms of an anticipated end or condition. This concept has much in common with the concept of purpose as described from the point of view of experimentalism.

The result is that concept of purpose is now accorded much more consideration by psychologists than was given when the wholly mechanistic point of view tended to dominate the field. Fletcher, in a recent consideration of the concept as developed from the point of view of experimentalism, states :

> Normally learning is incidental to the pursuit of purpose. This accounts, doubtless, for the fact that mere curriculum-stuffing is so barren of educational results. That learning is a process concomitant with purposive activities is one the keynotes of progressive education. The psychology of it is unquestionably sound.

Perhaps one of the most critical considerations of purpose in relation to behavior is presented by Troland in an extended analysis of motivation, an aspect of behavior to which purpose is intimately related. "Purpose," he states, "as it is understood by the man-in-the-street, is undeniably a factor in life, and no amount of introspection or physiological research can rule it out. A psychology which eliminates purpose cannot possibly correspond with the facts."

NATURE OF PURPOSE

Although psychologists rather generally agree at the present time that a significant aspect of behavior is suggested by the concept of purpose, they by no means agree as to the nature of this aspect. The minute distinctions which are drawn are of little concern to the curriculum worker. Yet it is necessary to have at least a general understanding of the psychological basis of the concept.

All behavior is initiated by a disturbance or irritation to an organism. This is equally true of the lowest and highest forms of life. There are a variety of disturbing forces that may bear on an organism. The most obvious source of disturbance is found in physical needs, although man is subject to a wide range of mental and emotional disturbances as well.

The sources of these disturbances to organisms are generally referred to psychologically as *motives*. It is often the practice, however, to use the term motive in a more restricted sense. When so restricted, disturbances which organisms experience are of two general types. "It is general custom," says Hollingworth, "to call brief and transitory irritants 'stimuli' or 'incentives' and to refer to the more persistent ones as 'motives' or 'drives.'"

When an organism is disturbed or irritated, methods of various kinds may be employed to change the disturbed condition into a condition of equilibrium. Book states :

> On the lowest level responses are crude physical and chemical affairs. On the somewhat higher levels the development of adaptive response is unsystematic and often very wasteful. On still higher levels the step in developing a response are taken in a more efficient manner, not only because higher capacities are possessed and employed but also because better use can be made

of the habits and skills that the learner already has acquired.

Dodge and Kahn describe the highest form of behavior as that which "invokes the conscious striving for purposes and values."

The level on which an organism is able to respond so as to eliminate disturbances or to change conditions that annoy it, depends upon its ability to forecast the condition that will result in equilibrium. and to arrive readily at ways of producing this condition.

As the levels of response become higher, the organism calls to a greater and greater extent on past experience to suggest what condition would provide equilibrium and the means by which such a condition could be achieved most readily.

On the highest levels of response, past experience is called on consciously. The situation is examined and consideration is given to means of achieving the desired change. These various means are tried out intellectually, the ones that promise successful outcomes are retained, and those that hold no promise are discarded. Thus a plan is evolved to achieve the desired change most expeditiously. Carrying on the trial and error process intellectually rather than overtly shortens the road to successful reduction of the disturbance. Not only does it shorten the road, but it guarantees greater possibility of success. This mapping out of a course of action that promises most immediate and expeditious reduction of a disturbance is the element of behavior that introduces purpose.

Purpose, then, evolves from the disturbance or irritation of an organism that can recognize in advance what change in condition will result in equilibrium, that can predict that consequences of given activities, and that can organize a given group of activities so that a desired change will be accomplished. Thus, purpose involves two elements, *motive* and *plan of action*.

Psychologists have long recognized the importance of motivation in learning, and that different sources of motivation have varying degrees of potency in inducing behavior of a desired type. The importance in this connection of a plan of action, and its close relationship to the motive has not been so clearly pointed out. Consideration of motive alone encourages unintelligent piecemeal action, while development of a plan of action without a motive is an impossibility. Hollingworth makes this relationship between motive and plan of action clear in his recent treatment of the learning process. He states :

> When . . . a plan occurs in connection with a motive, the two together constitute a *purpose*. A purpose then is the symbolic representation of a mode of eliminating a motive. It is a technique of relief, a plan of salvation, tentatively mapped out and considered before its execution. Since purpose play so large a part in human life, it is important to be clear about their charater. A plan without a motive is inert. But a motive without a plan is likely to be futile. A purpose requires the point of occurrence and synergy of a motive and a plan.

PURPOSE NOT A DISCRETE PHASE OF EXPERIENCE

While the general characteristic of behavior described by the term purpose may be analyzed in the foregoing manner, it should not be assumed therefrom that the formulation of purpose forms a discrete, clearly marked step in experience, and similarly, that the other characteristics of experience represent separate phases or steps in development of experience.

In the various undertaking of life, a specific series of activities is not devoted to the development of purpose, then anothet series to the realization of the purpose, and still another series to the evaluation of the outcomes, even though these are all important characteristics of experience. Purpose starts in a small way and matures as activities directed toward realization are carried forward. It is subject to modification up to the very completion of an undertaking. Activities for realization of the purpose are engaged in from first to last. The outcomes of activities, are continuously evaluated. In other words, these aspects do not represent parts of experience that may be added together to make up the whole. Rather, they indicate important characteristics of the whole.

One characteristic may be much in evidence for a time and then another may become pronounced. The development of purpose is the dominant characteristic for the initial stage of experience. The pursuit of activities to achieve the desired end then tends to become dominant. And finally, there is a tendency to react to the total series of activities, or, in other words, to evaluate them. Thus, purpose may be considered one element of experience which interacts continuously with other elements to make experience what it is, but which is especially pronounced during the initial stages of an experience.

IMPORTANCE OF PUPIL PURPOSE

The influence of pupil purpose on learning has often been ignored by teachers and curriculum workers. Attention has been devoted so completely to getting children to engage in certain specified activities or to employ certain subject matter that little attention has been given to what the children were endeavoring to achieve by means of the activities and subject matter.

This emphasis has often led to the use of sources of motivation ordinarily extraneous to the activities and subject matter involved; and to procedures that allow the child little opportunity to plan a course of action in order to achieve an end that he desires to reach. Apparently it is a common belief that any stimulus which causes children to engage in desired activities is a satisfactory one. In other words, the activity alone is considered sufficient to produce the desired outcome, and planning of his course of action by the pupil seems to be considered in many cases a useless complication of the educaeive process.

There is no more fatal misconception in education than this one. Not only does the pupil's purpose materially condition his present experience, but it also determines to a considerable extent the way present experience will serve as a guide to future conduct.

The type of behavior exhibited by an individual in a particular situation depends upon connections he is able to make between the disturbance he is experiencing and activities that may reduce it. If the disturbance involves stimuli to which the individual has reacted in such a way previously as to secure a satisfactory reduction of the disturbance, he will tend to react that way in the new situation or to develop a new response based on the previous one.

Thus, particular ways of behaving depend for recurrence on the presence in new situations of stimuli or "cues" to the stimuli, previously reacted to. If the school secures particular types of behavior by means of stimuli that the child is unable to identify in out-of-school experiences, these types of behavior will not operate generally in life situations.

This relationship of particular stimuli to particular ways of behaving is of special importance in meeting new situations. Meeting new situations satisfactorily requires that the individual be able to discover in the stimulus of the situation elements or "cues" of previously experienced stimuli. Having discovered these "cues" he is in position to devise a satisfactory way of behaving in the new situation. Obviously, if the school employs stimuli that the child will not find in new situations he meets in life, his behavior in the new situations cannot be modified by experiences he has in school.

Furthermore, unless the school provides him opportunity to meet many new situations under guidance, the possibility is small that he will be able to recognize in new relationships the elements or "cues" of stimuli previously experienced, with sufficient clarity to plan a satisfactory method of acting.

There are numerous examples of the tendency for teachers to overlook this point. Pupils present neat, well-written papers to the English teacher, but prepare poorly written papers for other teachers, and in out-of-school situations. In this case, the element which stimulates the production of a well-written English paper is extraneous to writing papers in general. It may be fear of a low grade in English, fear of the teacher, or some other extrinsic element, but since it is not present in other writing situations, it cannot stimulate the desiree response of well-written papers in all situations.

Similarly, a student may, through sheer fear of the teacher, respect the property of others at school, but fail to exhibit such respect in out-of-school situations. Not finding in out-of-school situations the stimulus of teacher fear, the child does not make the desired response. Fear of low grades is often employed almost exclusively to motivate work in the school. Often the rosult is that as soon as the student leaves school and the fear of low grades is no longer found in the stimuli to action, he ceases to engage in the activities learned at school. This accounts in no small way for the fact that many desirable activities carried on at school are not continued in life situations.

Studies of motivation suggest the importance of the end which the individual is endeavoring to achieve. These studies show how changes in anticipated results materially modify the performance of required activities.

Knight and Remmers conducted an experiment at the University of Iowa in which a group of freshmen and juniors were given a series of addition problems and similar exercises. The juniors did the work under usual classroom conditions. The freshmen were told that the results would have a bearing on their fraternity standing. The freshmen averaged twenty-one columns of addition for each five-minute period of work, while the juniors averaged eleven columns.

Peterson had the members of a class copy twenty words from the blackboard. They believed that these words were to be used later in an experiment. After the students checked the words, they were directed unexpectedly to turn the page and to write as many of the words as they could recall. The class was then given another list of words of equal difficulty and warned that they would be required to reproduce the words. Equal opportunity was afforded for studying the lists. On the second trial the students' recall was on the average about 22 per cent better than on the first, and after forty-eight hours, recall of the words used in the second trial was about 50 per cent better.

Kitson made a study of the output of journeymen printers. They were given a bonus for work above the norm previously maintained. Curing a five-month period these workers increased their output on the average 78 per cent. Every man increased his output somewhat and some increased it as much as 289 per cent.

When such relatively minor changes in the ends to be accomplished influence so vitally the performance of activities, it seems that educational outcomes might be influenced in most fundamental ways by changes from a classroom procedure in which pupils tend to engage in isolated activities, each under the direction of the teacher, to a procedure in which they select activities and organize them because of their appropriateness for achieving a certain purpose.

GUIDANCE INVOLVES THE DEVELOPMENT OF WORTHY PURPOSES

The implication in the foregoing discussion is not that pupils have purposes in some situations and not in others; or that they have purposes under good instruction and not under poor instruction. Pupils have purposes in every situation where conscious behavior is involved. The difference is to found in the quality of the purposes. From the standpoint of education, some are good, some are mediocre, and some are bad. The task of teacher and curriculum worker is to see that children are guided in the formulation of worthy purposes. To provide such guidance, a basis must be available for judging the quality of purpose. The following criteria may serve as such a basis.

The purpose should be one that requires behavior compatible with the aims of education. It is sometimes held that the ends of education will be realized if children develop strong purposes and engage actively in efforts to achieve them. There is strong reason to believe that this is an inadequate concept.

There is nothing inherent in the nature of children or of their environments that leads them to develop only socially desirable ways of behaving. Social and anti-social traits are developed in precisely the same way. Strong purpose and intense activity may lead with equal facility to the development of either type of trait. The trait developed depends to a major extent on the 'kind of purpose' held. Socially desirable traits will be developed if pupil purposes are compatible with the aims of education. This, then, is one of the distinguishing qualities of a desirable purpose.

This criterion may be applied by checking against the aims of education the behavior that most probably will be required to realize the child's purpose. If the behavior is the type required by the aims of education, one may have greate confidence that the experience involved will be educationally valuable.

The purpose should be one for which the plan of action can be based on past experiences. This second requirement recognizes that present experience is a reconstruction of past experience and that it can be rich and meaningful only to the extent that essential elements may be adapted from past experience. Thus, if a purpose is to lead to fruitful activity, it must be closely related to rich and vital past experiences. Lacking this relationship the pupil is not in position to maks adequate plans to meet the new situation. His learning tends to be reduced to the trial and error basis, with small chance of a satisfactory outcome.

This criterion rules out the passing fancies of children. It indicates that desire alone to engage in a particular undertaking is not an adequate assurance that the experience will be educationally worth while.

Moreover, this criterion indicates the essential weakness of the type of teaching which strongly emphasizes the importance of securing vocal requests from children as an indication of their readiness to engage in particular undertakings. Vocal request at most is but an incident in the development of a worthy purpose. The teacher should look below such immediate incidental happenings to discover what substantial foundation there is in the experience of the children upon which to build further experience. Request and assent should be grounded in the experience of the children. Both should be dynamic, alive, constanty enlarging in scope and increasing in intensity as the experience develops.

This criterion also lays bare the fallacy in the statement frequently made that children can be interested in anything and, hence, that instruction may just as well be organized about one thing as another. Perhaps it is true that children can be brought to give vocal assent to almost any undertaking. But, as was just pointed out, vocal assent or passing desire to engage in an undertaking has little to do with the fundamental type of assent which has as basis meanings, facts, and principles developed in previous experience. Even though it may be possible for the clever teacher to get pupils to request a particular undertaking, it does not follow necessarily, according to this criterion, that they are ready to engage in the undertaking. Thus, both passing fancies of children and requests extrinsically motivated by teachers are inadequate bases for developing desirable pupil purposes.

The purpuse should be one that pupils believes is worth while for him to achieve. Among the readily observable characteristics of behavior are the intensity, regularity, and persistence with which an individual carries foward activities. These characteristics are generally admitted as desirable, and, in fact, essential qualities of learning activity. Consequently, much attention has been given to the way in which these charactristics may be secured. The most satisfactory and only really effective means of achieving this end is to have pupils striving for something they really want to achieve and which they see requires the activities engaged in for success. The more keenly pupils desire to achieve a given end and the more clearly they see the relation of their activities to this end, the more intense, regular, and persistent will be their effects. Bode states : "... there must be an aim or purpose that is 'internal' to the learning process instead of being imposed from without." It is this "internal" element of purpose to which this criterion applies.

The importance of this criterion is generally recognized. For example, one of the statements accepted by the committee that prepared the curriculum yearbook of the National Society for the Study of Education included the following sentence : "Learning takes place most effectively and economically in the matrix of a situation which grips the learner, which to him is vital—worth while." However, the extent to which the criterion can be applied in formal education is often questioned. Counts holds a position subscribed to by many.

> Learning is prosecuted most effectively when the individual identifies himself most completely with the thing to be learned. Only under these conditions is there neither dispersion of attention, nor dissipation of energy. Yet, that the purposes of education can be achieved wholly through interest of this type is a fatuous deception. A fair measure of the work of the world must be performed under the conditions of derived interest.

Application of the criterion is complicated by the fact that the teacher has to deal with twenty-five to fifty individuals at a time. The intertsts and abilities of the group are often so varied that situations rarely arise that stimulate the thoroughgoing concern of all members of the group. Certainly their concern cannot be brought to a uniform stage of intensity. Consequently, under the best of conditions, this criterion is more fully met in dealing with some children in a group than with others.

It must be recognized also that the extent to which this criterion can be applied with a given group of pupils is materially conditioned by the type of purposes the pupils have held previosly. If children have been stimulated by the fear motive to carry on their school work, an immediate, precipitous about-face cannot be made. Sudden release from this motive results in pandemonium.

This is inevitable because the children have no basis in experience for organized responses to stimuli based on other motives. Change must be gradual so that a basis in experience can be developed. That is, stimuli based on the fear motive must be gradually supplanted by other stimuli which involve purposes that meet this criterion. Failure of teachers to recognize the need for building gradually in the experience of the child the basis for observance of this criterion has led to unfortunate results and to conclusions that the practical application of the criterion is impossible.

In spite of the difficulties encountered in applying this criterion, it represents a most important characteristic of a worthy purpose and every teacher should strive to meet its requirements to the highest possible degree. Its application makes teaching a live, vital, exciting undertaking. Failure to observe it tends to make teaching a meaningless routine.

The purpose should be one that arises from stimuli of a kind the pupil will meet in out-of-school experiences. As has been pointed out previously, particular ways of behaving depend for recurrence on the presence in new situations of stimuli or "cues" to stimuli previously experienced. This is the basis of the criterion to which consideration is now turned. The criterion is especially important because the regimen of school makes it possible to motivate children in several ways not possible in life situations. Schools tend to under emphasize the importance of stimuli which the child will find in other life situations. From time to time the school will find it necessary to employ methods of motivation that are to be found only in school situations, but the ideal should be to grow from this type to those that are encountered in many types of life situations.

Motives consistently overworked in school are fear of punishment, fear of ridicule, fear of teacher or parent disapproval, and desire for individual acclaim. For motives of this type others must be substituted, such as fundamental desire for achievement for the sake of achievement, concern for the good of the group, or desire to improve one's effectiveness as a member of the group. Motives of this latter type may be expected to operate in other life situations to bring about behavior of the type desired in a democracy.

The purpose should be one for which the pupil has mastered or can master in reasonable time the requisite abilities to carry on the activities required for successful realization. Nothing is more inimical to desirable educational outcomes than failure. Various studies have shown that past success and belief in the possibility of success in the undertaking at hand determine to a marked extent whether or not success is finally achieved, Book states :

> Nothing is more important in any instance of learning than to develop in the learner the habit of succeeding with every task that he is asked to perform. For a pupil to succeed, he must first of all believe that he can succeed and that it is worth while for him to do so. This belief is born of previous successes and is in direct proportion, so far as its strength and persistence and concerned, to the habit of success that has already been established in school and in life.

Every purpose depends for successful realization upon possession of certain abilities by those engaged in the undertaking. The abilities required vary with each undertaking. They may range from specific habits such as ability to pronounce words, to knowledge such as ability to apply scientific principles. Whatever the abilities required to realize a particular purpose, unless the child masters or has mastered these abilities, has chances of success in the undertaking are small.

Thus, it is important in guiding pupils in the formulation of purpose to see that purposes are not developed which lead to undertaking that require for successful completion abilities which the children do not possess or cannot master in a reasonable time. If undue time is required for the mastery of such abilities the force of the purpose will be impaired.

The purpose should be one which requires behavior on a higher level than the pupil has exhibited before. When children are not adequately guided they may fail to see in experience the basis for developing more challenging and worth-while undertakings. Like the Irshman's mule, they may run too long in one spot. In evaluating pupil purposes and considering the possibility of their development, the teacher should canvass the activities that may be required to realize the purpose. Unless these activities promise opportunity for behavior on a higher level than has been experiened up to that time, the teacher should guide the children toward other undertakings.

Evidence that this criterion is being met be found in the tendency for pupils to work increasingly for deferred values. One of the desirable characteristics of adult purposes is that they give attention to long-time consequences of acts and that the individual be willing to forego passing pleasures for outcomes of more permanent worth. In formulating their purposes children should be so guided as to develop an appreciation of the importance of such deferred values. If this criterion is applied, willingness to work increasingly for the future will be inevitable.

CURRICULUM DEVELOPMENT SHOULD PROVIDE FLEXIBILITY

The purposes that various groups of children formulate differ as their past experience, abilities, and environment vary. If a teacher is to guide children in the formulation of worthy purposes he must have freedom to take account of these variable factors.

Too often, curriculum making has been considered as merely a means of defining narrow boundaries within which teachers must work and specific ends that they should achieve. Courses of study, for example, occasionally go so far as to divide work to be covered into small time units. Review, examinations, and other details of this type are sometimes indicated. Other courses, with slightly less restrictions, define rather narrow limitations of subject matter and prescribe sequences with which the teacher must deal. Such narrow restrictions make it extremely difficult to develop worthy pupil purposes.

Curriculum mnking can help correct this situation by developing a more flexible program and by providing many suggestions for teachers out of which they are permitted to select those that are appropriate for given situations. Much can also be done to direct the teacher's attention to the pupll as the central factor in the instructional program. The ideal for curriclum development should be to provide a wealth of suggestions for teachers at all points without undue restrictions at any point.

Although teachers should be permitted freedom to guide children so as to meet individual needs, materials should be provided to encourage the intelligent use of this freedom. The provision of such materials is a major task in curriculum development. We now turn to materials that can be provided to assist the teacher to guide children in the formulation of worthly purposes.

AIMS OF EDUCATION AND WORTHY PURPOSES

A definite, clear-cut statement of aims of education provides the teacher with the first essential material for evaluating pupil purposes. If the statement is so arranged that aims can readily be particularized, the process of evaluation is made relatively easy.

The use teachers make of aims in evaluating purposes is also conditioned by the accepted function of aims. We have already seen that one concept of aims is that they are definite ends to be reached. When so conceived, the teacher first of all decides what aim should be realized and then seeks means of achieving it. On the other hand, aims may be conceived as indicators for direction of growth. They tell not how far to go, or where to go, but in what direction to go, "How far ?" and and "Where?" are left to be answered in terms of the particular individuals who are doing the traveling.

When this point of view is held, the teacher's attention is first directed to the pupils. He considers the various elements in the situation that will stimulate growth in the direction indicated by the aims of education. He seeks maximum growth rather than development to a specified point. If aims are considered as relatively fixed goals to be reached one after another, an element of inflexibility is introduced. If they are considered as indices of the direction in which growth should go, progress being as rapid as possible, the teacher's attention is directed first of all to the pupils to be taught.

ORGANIZATION OF THE COURSE OF STUDY AND WORTHY PURPOSES

A teacher may be assisted or hampered in guiding pupils in the formulation of worthy purposes by the form in which courses of study are organized. Two basic plans may be used. In the first, a definite instructional arrangement is presupposed. For example, it may be assumed that the teacher will teach a given textbook, covering it sequentially with individual recitations as the instructional unit. Or, it may be assumed that certain specified units of work will be taught in a particular sequence.

Whether on the basis of class recitations, units of work, or some other unit, the course of study provides a definite instructional arrangement around which materials are organized. This arrangement restricts the teacher to a relatively small area at a given time in the development of the instructional program. It tempts teachers to resort to undesirable levels of motivation if need to get pupils to the restricted areas.

The other plan for organizing a course of study is based on the assumption that each teacher will develop instructional especially suited to the group of children taught. Materials in the course of study are considered as sources from which the teacher will select that which is appropriate to develop a particular instructional plan.

Thus, a plan of organizing materials in the course of study for ready reference supplants organization around pre-determind instructional units. Course of study materials serve to supplement teacher planning of instructional units rather than to eliminate the need for it by providing pre-digested materials. In this case the materials in the course of study are organized somewhat as a source book or encylopedia. The aim is to make a wealth of materials readily available for general use, regardless of the specific enterprise with which various individuals may use them.

With a course of study of this latter type, teachers find it possible to organize the materials in the course of study into an instructional program based on the purposes of their particular groups of children. Thus, such a course of study is a definite aid to teacher consideration of pupil purpose.

PUPIL INTERESTS AND WORTHY PURPOSES

The most fruitful point at which curriculum making can assist teachers to guide pupils in developing worthy purposes is in connection with pupil interests. Just how this assistance should be provided, however, is an open question because of differences in belief as to the place pupil interest should hold in the educative procedure. This question has been discussed from many angles. Extreme interpretations of various points of view have many times obscured fundamental considerations. In addition, the use of "interest" with a variety of meanings has led to confusion. This makes it necessary for us to give consideration, first of all, to the meaning ascribed the term in our discussion.

DEFINING INTEREST

We shall employ "interest" to indicate the attitude developed through a pleasant or satisfying experience. Opposed to "interest" is the attitude termed "aversion." There are two evidences of interest : persistence of efforts to realize an end, and a tendency to continue to seek experiences of similar type. Conversely, "aversion" is evidenced by a tendency for an undertaking to be dropped as quickly as possible and by efforts to avoid future experiences of the same type. These attitudes are associated with either objects or activities involved in experiences.

Hence, interests may be indicated either in terms of the objects or the activities that stimulate the individual. Fryer calls these objects or activities "interests." He states :

> For this designation of interests as stimulating objects and activities in the individual's environment there is precedent from the measurement of abilities. The measurement of abilities consists in the measurement of ability expressions. The abilities receive their name, as do the interests, from the stimulating objects and activities. Interests are the objects and activities that stimulate pleasant feeling in an individual.

To illustrate, when we observe a boy who seeks opportunities to play football and who plays with great vigor, we say he is interested in footfall or in playing footboll. If we observe him frequently working with diligence on arithmetic problems, we say he is interested in arithmetic or in working arithmetic prolems. Of course, conclusions of this type are often misleading, for we may associate the activity with the wrong stimulus.

The boy playing football so energetically may be doing so in order to get his picture in the paper or to even a grudge with a boy on the oppossing team. The boy working arithmetic may be doing so to avoid the restraint of staying in after school. In these cases we would say the boys are interested in popular approval and freedom from physical restraint, rather than football and arithmetic. The fact that this type of misinterpretation is possible on the part of an observer, however, in no way changes the nature of the attitude in the one who is "interested," and, hence, does not affect our definition.

Interest, according to this concept, is closely related to pupil purpose and is fundamental to it. Upon this foundation, purposes are developed which the learner holds to be worth while for him to realize. Lacking a basis of interest, there is nothing in past experience on which to develop worth-while present experience. Under such circumstances present experience becomes largely meaningless or an imposed task. In either case, the ends of education are being defeated since the learner does not engage in the undertaking at hand with persistence and continuity of effort, nor does he continue his activities when relieved from the pressure of the extraneous motivating force.

The place of interest in education has often been confused by superficial interpretations of the concept. Emphasis has been placed on getting pupils to state orally that they are interested in particular things and on the unusual things in the environment which may attract a child's attention. Things indicated as interests by these means may be interests of the shallowest sort.

They may involve things with which the child has had no adequate background of experience, or materials with which he is entirely incapable of dealing. Pupil interests with which educational procedures should be concerned should not be thus lacking in depth. They must represent favorable attitudes based on ever-enriching experience. They must be discovered more by careful study and analysis of the experience and environment of the child than by the chance objects which attract his attention.

Interests, then, do not represent passing fancies or whims. They are deep-lying attitudes, developed through experience, which largely determine the intensity and consecutiveness of efforts and the tendency to engage in particular activities in the future. They are, when so conceived, a most important element in the educative process. As previously stated, worthy pupil purposes must grow out of pupil interests. Consequently, one of the first steps a teacher should take in guiding pupils in the formulation of purposes is to discover in what they are already intesested.

DISCOVERING AND MEASURING INTERESTS

Considerable attention has been given recently, especially on the secondary school level, to means of discovering and measuring interests. Referring to this development during the past ten years, Fryer states, "...the measurement of interests has gone forward at a rapid peace. A decade ago there were no inventories and tests of interests. The early forms of many of those that we have today were just being given an experimental trial."

The most commonly used method of discovering interests is that of having an individual give an estimate of his feelings. He is asked to record in written form or to estate orally whether or not he is interested in certain objects or activities. This method has certain obvious limitations. Novel objects or activities may appeal to an individual merely because of the novelty, or the manner of describing the activity or object may exert undue influence.

Moreover, an interest may be associated with a variety of objects and activities. This method depends upon the selection of a key object or activity from which the individual estimates his reaction. The reaction will be conditioned by the object or activity selected as the key for reaction.

These limitations may be made clearer by on illustration. Essentially the same interest might be implied by any one of the following terms :

(a) rocks,

(b) studing rocks,

(c) analyzing rocks,
(d) geology.

A child might indicate an interest in *geology* because the term was novel to him, deny an interest in *studying rocks* because of unfavorable reactions to the word *studying*, indiacte an interest in *analyzing rocks* because of the implication of experimental activities, and indicate no reaction to *rocks* because of the failure of the term to suggest activities to him.

Fryer concludes, however, that in spite of limitations on estimates of interest, such estimates are as valid as estimates of any trait.

In an effort to improve the validity of interest estimates, various types of interest questionnaries and inventories have been developed. These instruments have been developed principally to assist in guidance, both educational and vocational, on the college level and in business and industry. They provide a stimulus to the individual to canvass his interests thoroughly, an easy means of recording reactions, and a basis for comparison. The Garrtson-Symonds *Interest Questionnaire for the Guidance of High School Boys* is such an instrument for use on the high school level.

Interests may also be discovered by observing the activities in which children engage voluntarily. This is one of the most satisfactory methods for the use of teachers. Interests so discovered are usually sufficiently well-developed to provide an adequate basis for developing worthy pupil purposes.

Eginton suggests seven ways in which teachers in practical school situations can discover interests :

1. Create situations in school where potential capacities and interests...may be dicovered and given opportunity for self-expression.
2. Analyze topics pupils choose for essays.
3. Observe pupil conversation in halls and on the playground.

4. Study out-of-school activities.
5. Interview the pupils to find how they spend their leisure time, what they read, and what they like to do.
6. Consult studies of pupil interests.
7. Provide a question box or designate a space on the blackbord for pupils to indicate what they would to do.

The Florida State Course of Study for Elementary Schools reports several methods successfully used by teachers.

(1) Ask the members of the class to answer questions somewhat similar to these : Why do you want to come to school ? What do you want to learn this year ? Have you seen something lately about which you have wondered but about which you could not find the answer ? What do you like to do at school, at home ?...

(2) Watch the children while they are playing or working during their free time. The books which the children use voluntarily, the objects which they make, the playthings which they choose, the groups which they join, and the free discussions—all give to the teacher an excellent idea of the things about which the children are concerned.

3. Talk casually to individuals and to small groups letting them take the lead in the conversation. Occasionally when questions are asked, the teacher may make mental notes without comment. As soon as possible these notes should be recorded for future reference.

4. Give the children an opportunity to tell the others about good times they have enjoyed, about the interesting thigs they are doing or have done, and about the things they would like to do...

5. Ask the children to collect pictures which appeal to them or which they think would appeal to some member of the group. (These pictures may be brought to school and classified

by the teacher for her own guidance. Other objects of interest may be used in similar manner.)

6. Distribute to small groups of children catalogs from .. mailorder houses and give the pupils directions for using the index. The teacher may watch to see what the children look for...

7. Talk to the parents to find out how the child spends his free time at home and the interests which his parents know about.

Helseth makes the following suggestions about discovering and developing interests :

I. We may seek a well-rounded picture of the child.
   1. Find his physical, mental and social status.
   2. Study his record at school. Analyze weaknesses and strengths. Trace back to causes.
   3. Enter into his playground hours and his free minutes at school as definitely as into his class hours.
   4. Know his home hours and his community hours by direct participation or by conferences with an understanding mother.
   5. Observe analytically the child's ways of responding—his methods of studying, of playing, and of reacting to comrades, situations, and materials.
   6. Discover what child reads, what games he plays, what responsibilities he carries, what he thinks about, with whom he converses seriously, what he does with scraps of time that he controls, etc.
   7. Observe mischievous of pernicious tendencies ; study their instinctive basis ; see if some happy expression of basic impulse may not be substituted.
   8. Read analyses of children made by others and consider their truth with regard to the child we are studying.

II. We may make *school setting* such that it will tend to bring actions connected with child's interests. We may then see and strengthen these interests.

1. What child sees of classroom when he enters, should express *ideas* to him.
2. Opportunity for *doing* in many different ways should be evident to child from classroom itself.
3. What goes on in class hours, in auditorium, in library, in walks, in playground, in lunch room and corridors, should make a total meaningful experience to child, into which own planning and evaluating enter.
4. Child should *see relationships* between his activities in the home, community, and school, and be free to express ideas he sees.

III. We may find *something to do* in which child and teacher can both be active in developing new interests and strengthening old interests of child.

1. Should have connection with the particular child's past vivid experiences. (This does not refer to his past attempts at learning lessons assigned him.)
2. Should arouse his particular tendencies to plan, to investigate, to make, and to enjoy.
3. Should arouse imaginative and creative impulses of this child and not merely arouse habits of repeating or copying.

IV. We may buy, gather, borrow,... or make whatever is needed by child in order for him to investigate, to experiment, to express ideas and feelings, and to perfect skill. His reactions to a rich variety of materials will reveal and develop interests.

1. Books.
2. Visual materials.
3. Practice materials.

4. Tools.
5. Raw materials.

V. We may find ways of individualizing our contacts with the child.

1. *Many printed materials* may be used so that each child can have an "audience situation" with teacher and comrades when he brings forward ideas and facts.

2. A big enough joy may be undertaken by the class so that every child can find *something unique to do* within that job for class and himself.

3. Enough reading and formal written response can be assigned at one time for children to have something formal to do whenever their personal plans or materials or abilities fail to permit further work on the more free activies. Teacher's time is thus released for *individual conferences.*

4. *Objective practice* materials with keys and charts of progress, usable again and again by same child or many children, may be bought and prepared. Child drills himself and teacher's time is freed for finding and developing ais intersts.

5. *Talents of every child* may be consciously sought and developed. Teacher may begin by listing at least one for each child, with plans on how to use in classroom, and note of material needed. (Conception of "talents" must be wide to include abilities with regard to : beautiful penmanship, water coloring, drawing, making illustrations with paper, woodworking, map making, modeling, dramatizing, imagining stories, hunting, materials, school-housekeeping keeping records, using reference books, making outlines, experimenting, leading in games, arguing, singing, reading aloud, checking upon results,

planning for class, summarizing results, seeking better forms, etc.)

6. Specific help in removing causes or counteracting results should be given each child who has a serious weakness.
7. The *child's particular methods* of working should be *analyzed.*
8. Much of the teaching may be in small groups with ever shifting membership, each membership brought together for a very specific job.
9. Records on individual children may be kept constantly developing. In a folder for each child may be gathered data on forms, samples of work, bits of analyses by the teacher, and plans for helping the child.

STUDIES OF INTERESTS

A large number of studies of interests have been made. Studies that may be used for curriculum development may be classified under the following heads :

A. Preferenees of pupils for school subjects.

B. Preferences for various topics or objects included in a school subject.

C. Preferences of children and adults for various types of reading materials; *e.g.*, magazines, books, literary selections, poems, newspaper contents.

D. Preferences for colors, forms, and various types of pictures.

E. Preferences for various play and recreational activities.

F. Choice of vocation.

A. School subjects. Studies of the preferences of pupils for various subjects have contributed little of value to curriculum development. The fact that there appears to be no uniformity of preferences in different schools indicates that factors other than the nature of the subject tend to determine differences. Probably the teacher factor is of overwhelming importance. Without this factor controlled, studies of the problem are of little value. In fact, it is daubtful if they would be of much value under any circumstances.

They are so broad in scope that no real indication is provided of what objects or activities are associated particularly with the interest. Hence, there is no indication of what type of curriculum development should be undertaken. At best, a general area may be suggested in which study is required more urgently than in other areas.

B. Topics and objects in subjects. Some studies have particularized the attack on pupil interests by studying pupil preference for certain topics or objects with which a particular subject deals. Thorndike employed this method to try to discover what tope of algebra problem pupils prefer. Curtis studied the topics of science in which pupils are interested. He employed his analysis as a basis for developing a reading program in science materials.

Studies of this type are of considerable value in curriculum development. They suggest areas in which teachers may discover interests of children and in which materials may be provided. They are subject, however, to a limitation of technique discussed previously. Dependence is placed on the ability of the individual to associate his interests with key objects or activities. As pointed out, recognition is conditioned by the particular object or activity selected, and novelty may play a large part in selections. Even with the limitation of technique, however, study of the objects or activities children believe they are interested in is suggestive and valuable.

C. Reading materials. Interest in various types of reading materials is considered in Chapter 10 as an aspect of the problem of selecting subject matter. As is pointed out there, as early as

1902, Abbott made a study of pupils' preferences for various classics. Since that time a large number of studies have been made of the reading interests of both adults and children. Studies have been made of preferences for literary selections of all types, magazines, books for recreational reading, and the sections of newspapers. Gray points out that "more studies have been made of the reading interests and preferences of children and adults during the last few years than of any other reading problem."

A survey of studies of reading interests up to 1930, is presented in a bulletin of the Catholic University of America. Forty studies are recorded.

Recently the American Library Association and the Carnegie Corporation have sponsored some extensive studies of reading preferences. *What Children Like to Read* is one of these studies. A list is given of recommended books for children of various grade levels of reading ability. Waples and Tyler made an extensive study of adult reading preferences. Studies of this type not only exert a desirable influence on the content of the [curriculum, but suggest types of interests that predominate during various periods of life.

D. Colores, forms. and pictures. Studies of preferences of children for various colors and forms have been made in an effort to secure evidence as to what types of art materials are of greatest interest to pupils. These studies have revealed the colors children prefer, the influence of saturation and brightness of color on preferences, the forms which children are most interested in drawing, and pictures children prefer. Gale's study is one of the most sugggestive for curriculum making. However, these studies as yet have exerted relatively little influence on practical curriculum programs.

E. Play and recreational activities. Considerable attention has been given to play activities which pupils prefer. Workers interested in both extra-curricular activities and physical education have dealt with the problem. One of the most helpful studies was made by Lehman. He studied the play activities of several thousand persons of different ages. Activities preferred by boys and girls and persons of different ages were discovered. Lehman and Witty present a list of activities that pupils like, which also are of value in curriculum making.

F. Choice of vocation. Careful and extensive studies have been made of vocational interests. These studies have as their principal objective provision of a more adequate basis for pupil guidance in the secondary school. Attention has been given largely to two problems : first, to the permanence of vocational interests; and, second, to means of securing the most accurate indication of interests. As a result of studies of these problems a variety of rating scales and interest questionnaires have been developed. Data that can be collected with such instruments may be employed effectively in curriculum development. However, Koos and Kefauver, who present a critical analysis of these scales and questionnaires, give the following warning :

> These interest scores supplement the results of the exploratory courses and other evidences of interest and capacity of students .. These measures of interest should not replace other data but should be used only in supplementary relationships. The evaluative data are so inadequate and the extent of their use so limited that the present writers are disposed to urge both critical care and caution in their interpretation and use of these indications.

THE COURSE OF STUDY AND INTERESTS

Materials may be presented in the course of study that will help the teacher to use interests effectively in guiding pupils in the formulation of worthy purposes. One means is through suggestions of things that tend to be of general interest to children of the particular age or grade to be taught, and, hence, to stimulate activity. These may be indicated either in terms of the object or the activity which is associated with the interest. That is, it might be said that a child is interested in reading or in books, in cooking or in food. In either case the meaning is the same. In the one case, the complete statement would be : Children of this age or grade, general background, and ability tend to have a mind set which leads them to engage whole-heartedly in undertakings involving reading. In the other case, the statement would be : Children of this age, general background, and ability tend to have a mind set which leads them to engage wholeheartedly in undertakings involving books.

Such suggestions may be made available for teachers in a variety of ways. Ad illustration of one way follows :

Grade One

Center of Interest : *Home and School Life*

1. If your pupils become interested in any of the following items, it will provide opportunity to initiate work that deals with *protecting and maintaining life and health in our home and school* : fire, toy fire engines, water, food, work of the school nurse, a doctor, a policeman, or a fireman, traffic signals and regulations, traffic accidents or accidents on the playground.

2. If your pupils become interested in any of the following items, it will provide opportunity to initiate work that deals with *providing the family with food, clothing, and shelter*: cafteria, parties, school lunch, milk, pets, fruits, garden, play house, cooking, the work of the milkman or vegetable man, construction of a house.

3. If your pupils become interested in any of the following items it will provide opportunity to initiate work that deals with *having an enjoyable time at home and scoool* : visitors, dancing, parties, radio, pets, play house, movies, songs, circus, birds, flowers, pictures, toys, musical instruments.

4. If your pupils become interested in any of the following items, it will provide opportunity to initiate work that deals with *making our home and school more pleasant and beautiful* : flowers, pictures, music, goldfish, furniture, curtains, bedtime stories, radio.

5. If your pupils become interested in any of the following items, it will provide opportunity to initiate work that deals

with *ways our family travels from place to place* : boats, trains, work of trainmen, or street car men, automobiles, busses, street cars, airplancs, horses, wagons.

Suggestions of this type have advantage of being very flexible. There is no suggestion that a teacher should force a particular phase of work. On the other hand, it is assumed that a teacher is able to study his own group of children and deal with them as a particular group. More careful inventories than those usully employed of the abilities and interests of the children taught would be required by this procedure.

Another way of assisting teachers to guide pupils in the formulation of purposes is to suggest various approaches to the units of instruction. The following suggested approaches to a unit of work on Holland illustrate the procedure.

Suggested Ways to Approach This Unit

1. Through a discussion of the sea wall at Galveston; why it was built, the manner of its construction, materials used, etc., which should gradually lead into the study of the dikes in Holland and the differences in their purpose, mode of construction, materials used, appearance, etc.
2. Through the study of some phase of art or literature that treats of life in Holland, such as : "The Windmill," by Ruysdael; the poem, "The Leak in the Dike," or Long fellow's poem, "The Windmill."
3. Through the use of lantern slides or stereoscopes which will cause the children to ask questions about the dikes, the wooden shoes, etc.
4. Through reading to the children one of the many interesting books about child life in Holland, such as, "Hans Brinker," "Marta in Holland," "Our Dutch Cousins," or "Holland Stories," that give vivid and accurate pictures of the land and the people.
5. Through placing pictures of the Dutch people in their quaint costumes about the room, or pictures of windmills, storks, tulips, etc., to call forth questions on the part of the children.

6. Through the discussion of modern problems such as those which follow.

Conservation through Careful Planning (*Thrift*)

This concept might be developed around the introduction of such problems in *arithmetic* as deal with the child's use of his own personal belongings and their cost as :

> The average school child of your age wears out a pair of shoes costing about $6.00, every three months. Suppose that you plan to make every pair of your shoes last four months instead of three, how much could you save at the end of the year ? This money might be used to start a savings account, or be used for something that you desire to have.

Other problems dealing with the breaking of dishes, or of discarding things that are still useful, might serve the same purpose.

The same principle might apply to the people of a whole nation in saving the things that nature has stored in the earth for us, which cannot be replaced when used up, by trying to plan for the production of just such things as will be used by the people without the waste of any. Do you know anything about the regulation as to the amount of oil that is permitted to be produced from our Texas oil fields ? Should our government regulate the amount of things of this kind that may be produced within a given time ? This is a question that is before the people today.

Let us try to find out whether Holland has used her resources wisely.

Through discussion of the location of the Mississippi delta lands and the opportunity that we have to reclaim some of it for useful agricultural lands, by :

> *Map locations* of the region and the building up of concepts to the dangers of overflow that threaten this region at certain seasons. *Map interpretations* of the probable climate of a region that lies so far south, bordering a

warm inlet of the sea, in a level region, and finding out what crops that type of region might produce if made available for continuous cultivation.

Discussion as to how the price of sugar might be affected if all this delta land were used for this crop.

We would not consider the expense of reclaiming this land unless it were profitable to us to do so. How could we decide whether it would be profitable ? Does the United States Government have a department that could furnish information on such things ?

Let us see whether the little country of Holland has done anything along the line of reclaiming lands in delta regions. Why has it seemed so advantageous to them to do as they have about it ?

Individual Responsibility for Community Welfare

Through a discussion as to whether we are responsible for the traffic regulations; whether we are responsible in matters of preventing unnecessary waste from fires that might have been prevented; whether we are responsible for observing the regulations of the city and school health departments in observing the requirements that they set for us in the matters of vaccination, quarantine, etc. Let us see to what extent the people of Holland have a feeling of their personal responsibility in community welfare, by the way in which they live, and through interpretation of the poem, "The Leak in the Dike."

Government Responsibility in Social Welfare

Through a discussion as to why we have compulsory education in our country; why there are laws regulating young children's working in factories, etc.; why there should be a system of taxation. Compare with these the consideration that these problems have been given in Holland, through use of the materials in the content of this unit.

This procedure has one outstanding difficulty. It necessitates the development of the child's purpose within a relatively restricted field. It is obvious from an examination of the foregoing material that the children are going to study Holland, regardless of whether or not they are interested in the matter. The problem, then, is for the teacher to find a means of interesting them in a predetermined body of subject matter. In all probability the same difficulty will be encountered that has been met in organizing instruction around logical arrangement of subject matter. The most worthy and educationally valuable pupil purpose may cut across a predetermined body of subject matter. It may not be restricted to Holland or to any other single phase of subject matter, however valuable in itself. To force it into such a limitation reduces the possibility of developing a pupil purpose which the child himself believes is worth while and with which he is really concerned.

CLASS INVENTORY OF INTERESTS

Whatever provision may be made through development of curriculum materials for aid in organizing an instructional program based on fundamental pupil interests, the satisfactory use of such materials must culminate in the planning and execution of a type of instruction based on worthy pupil purposes.

To assist in the wise use of materials and information on pupil interests, each teacher should keep an inventory record of the interests of his class. Group and individual interests, passing and fundamental interests. should be noted. All available means of discovering and measuring interests should be employed to develop the inventory. The inventory should be cumulative and, when possible, information on the interests of individuals and groups should be summarized at the completion of a school year and made available for the next teacher. Such an inventory, along with measures of ability and capacity, may be considered the basic specifications for instruction arising from the nature of the child, just as the aims of education are the specifications arising from the nature of society.

foregoing analysis, that the children are going to study Holland, regardless of whether or not they are interested in the subject. The problem, then, is for the teacher to find or develop and use interest in them in pursuing their study of subject matter. In all probability the same difficulty will be encountered as in the case that is organizing instruction around logical arrangement of subject matter. The most worthy and educationally valuable pupil experience may cut across a preorganized body of subject matter. It may not be pertinent to Holland or to any other single phase of subject matter, however valuable in itself. To force it into such a limitation reduces the possibility of developing a good purpose which the child considers to be worth while and with which he is really concerned.

CLASS INVENTORY OF INTERESTS

Valuable provision may be made through development of curriculum materials for aid to teachers as instructional programs based on fundamental pupil interests. The satisfactory use of such materials, once organized in the planning and execution of a type of instruction based on significant pupil purposes.

To assist in the selection of materials and information on pupil interests, each teacher should keep an inventory record of the interests of his class. Group and individual interests, pastimes, and fundamental attitudes should be noted. All available means of discovering and measuring interests should be employed to develop the inventory. The inventory should be cumulative and, when possible, information on the interests of individuals and groups should be summarized at the completion of a school year and made available for the next teacher. From an inventory, along with measures of ability and capacity, may be determined the basic specifications of education arising from the nature of the child, just as the aims of education are the specifications arising from the nature of society.

8

Criticism of Secondary School Curricula in Later Modern Times

Purpose, as previously shown, involves a plan of action to bring about some end or condition an individual desires to achieve. A plan of action is merely a purposed series of acttvies so related that the individual believes they will result in the desired outcome. The appropriateness of the activities selected and the way they are carried forward determine the success or failure of an undertaking. Similarly, the educational value of the experiences depends upon the activities employed for realizing the individual's purposes. This being the case, curriculum making should assist teachers to guide children in the selection and prosecution of activities designed to realize their purposes.

VARIOUS INTERPRETATIONS OF ACTIVITY

The progressive movement in education has given the term activity wide currency in educational discussions during recent years. The term is used, however, with different meanings. On the one hand, it is used to indicate a particular way of organizing instruction. With this meaning, activity, unit of work, and center of interest are used synonymously. The term is generalized by reference to an "activity curriculum." Activity is defined in this way in the California 'Teachers' Guide to Child Development.'

> An "activity" is any large learning situation broughtab out by the strong purpose of a child or group of children to achieve a worthy end desirable to themselves, which, like those situations in life through which we are most truly educated, draws upon a large number of different kinds of experiences and many fields of knowlege.

Carey, Hanna, and Meriam apparently found this a commonly used meaning, for in their 'Catalog' they place in the same category, 'Unit of Work, Activity, and Project'.

The term, however, is often given a quite different cannotation. It is employed in the psychological sense to refer to efforts of an organism to adjust to various conditions. When used this way activity becomes general singnificance to learning. This is recognized in statements frequently made to the effect that there is no learning without activity.

Many references to activities in the curriculum appear to use term with a meaning that more nearly approaches this latter concept. Rugg and Shumaker refer to the "component activities" of a unit of work. They state : "The difference in range of activities, therefore, is only an obvious surface distinction between the unit of work and the school subject." Numerous courses of study refer to activities that may be included in units of work. The long Beach, California, courses of study, for example, which are organized around units of work, include lists of activities among the materials suggested for the units. The Virginia state course of study lists suggestive activities suitable for use in units of work. The Maryland state course of study in science in the elementary school gives in connection with each unit, "Things to Do and Talk About."

When activity is used with this more specific meaning it include such activities as : reading stories, reading for information, making maps, making booklets, constructing playhouses, making rugs, carrying on specific experiments, such as making oxygen, growing bacteria, observing plants develop, and keeping an aquarium. Obviously, the meanings of activity in the two instances are quite different. Using the term in the first sense, some schools may have activities and others may not. That is, some schools may employ the particular method of organizing instruction indicated by the terms "unit of work" or "center of interest" while others may not. On the other hand, activity used in the second sense is found in all schools regardless of the particular type of instructional organization employed.

Confusion has often arisen in curriculum work because of failure to make clear the way in which the term activity is used. In some cases it is used in one way part of the time and in another way part of the time. Lane says, for example, "The activity and the large unit of work are obviously the same thing, ..." At another point he states: "In nearly every unit of work there are a few activities in which the whole class is interested ; others which appeal to small groups of children and still others which have little appeal except to some individualist who does not care to work with the group," Obviously, 'the activity' is one thing and 'activities' another.

Meanings are sometimes confused in discussions of the "activity curriculum." It appears that this term refers sometimes to the organization of instruction around dominant purposes of children and other times to the predominance of overt physical activity. For example, the California 'Teachers' Guide to Child Development states ;

> By the term "activity program" is meant a school curriculum which provides a series of well-selected activities for different levels of growth : which offers opportunities to children to engage in worth while, satisfying experiences while carrying out their most worthy and most challenging purposes.

Stevens, on the other hand, indicates that the determining characteristic of an activity curriculum is emphasis on first-hand experience with people, things, and materials. Freeman considers this emphasis the earmark of the activity curriculum for he states : "A program which involves a large measure of ....overt activities is called an activity program." Such diverse implications of the term activity when employed in conjunction with the curriculum make it especially important to use the term consistently.

In considering the foregoing interpretations of activity, it must be recognized that activities may be indicated on a variety of levels of complexity. One activity so flows into another and is so integrated with others that any breaking up of the whole appears more or less artificial. For example, suppose a group of children develop the purpose of beautifying the school grounds. This undertaking would be broken up into a number of more specific undertakings.

They might decide that the front yard should be leveled, that a sidewalk should be built from the door to the street, that trees and flowers should be planted, that containers for waste should be built for the school grounds, and that a garden should be planted in the rear of the school. Each of these undertakings may be considered an activity. Yet each may be broken up into a large number of more specific activities. For example, leveling the front yard depends on securing necessary tools, digging and carrying dirt, devising a means of telling when the ground is level, and smoothing and rolling newly filled-in dirt. Each of these activities might be broken up into still more minute muscular or intellectual actions needed for performance.

The possibility of indicating activities on such a variety of levels accounts for the use of the term in different ways. Nevertheless, it is important to avoid confusion in use of the term. In our discussion, the term does not refer to a method of organizing instruction. It is not used synonymously with unit of work. It refers to the efforts expended by an individual to modify conditions. Used in this way a unit of work, or for that matter any instructional unit, involves a number of activities. Considering our previous illustration then, the term activity is used to refer to leveling the front yard, planting trees and flowers, building a sidewalk, making containers for waste, planting and keeping a garden ; in other words, to the several undertakings in which the pupils engaged to realize their purpose of beautifying the school grounds.

RELATION OF ACTIVITIES TO LEARNING

Activities have been so much emphasized in curriculum making that it is well to consider briefly the relation of activity to learning. Accurately speaking, life is but a continuous flow of activities, one activity setting the stage for the next. Eduction is achieved by participation in activities. There is no such occurrence as passive learning. Monroe indicates the relation of activity and learning thus : "It is only through engaging in .... activities that the child learns. The teacher cannot communicate skills, ideas, facts, principles, and ideals directly to the student ; knowledge is not transferred from a textbook to the learner's mind."

Considered from the standpoint of learning, activities occur on various levels. On the lowest level they are physiological. They have to do with the growth of the body, bones, muscles, etc. A more advanced level includes activities described as reflexes, such as coughing and yawning. A somewhat higher level may be referred to as the observational level, while a still higher stage may be called the idetional level.

With this concept of the relation of activities to learning before us, we may consider a point about which there is often confusion. Active and passive schools have been so discussed as to give the impression that in some schools pupils engage in activities while in others they do not. As a matter of fact there is activity in the most traditional classroom. Reading, reciting, listening to lectures, working problems, writing themes, taking examinations, and throwing erasers are activities as surely as building a play house or churning cream. This is true, although it must be recognized that the traditional concept limits very much the type and variety of activities in which pupils may engage in school, as well as their control over these activities. Melvin states the point thus :

> This conception of the school activity of children as being chiefly listening and occasionally participating by answering of questions pertinent to the teacher's organization of the lesson, has had an enormous influence upon discussions teaching procedures. Listening is an activity which is comparatively passive. The listener exerts no control over the form his conduct takes in listening. He contributes nothing to the organization of the elements of the situation. He only demands that the lesson which is being taught him be presented by the teacher with the maximum of clarity and effectiveness. He exerts no positive control over the activity in which he is engaged, but allows the teacher full freedom of organization and presentation.

It is not a case then, of one situation having activities and another not having them. Rather it is a difference in the kind and varity of activities. The question is, Are the activities in which children in a particular classroom engage good ones, or are there others in which they could engage more profitable ?

A further impression given by many discussions of activities is that overt physical activities are of predominant educational worih. As a result, hammering, sawing, building things, taking trips, making booklets, cooking, making rugs and furniture, and other observable activities have been emphasized. At the same time, there has been a tendency to hold that activities of a predominantly intellectual type are of questionable value. The fallacious reasoning that leads to this emphasis is indicated by psychologists as follows :

> Psychology teaches that the mind functions bodily activity; . . . in school, children should be moving about and doing with their hands.

Overt physical activities have no monopoly on educational worth. Intellectual activities which involve vicarious experiencing have an equal claim to consideration. The limitations of time and space make activities of this type an essential part of educational procedure. They should not be relegated to a minor position.

It is true that overt physical activities may quite appropriately hold a large place in the education of the young child, but to assume that this type of activity should hold the same predominance in education as maturity progresses is fallacious. In all probability such activities gradually diminish in educational importance from childood to adulthood and activites that are primarily intellectual become increasingly important.

Probably by the latter part of the elementary school period the intellectual type of activity should become predominant. It is possible that failure to recognize the importance of intellectual activities accounts in part for the difficulty experienced in introducing progressive practices into higher grades. The effort to introduce in higher grades the same kind of activities that are suitable for lower grades and to evaluate work in higher grades in terms of the presence or absence of activities commonly considered desirable in lower grades has been unfortunate from whatever point of view it is considered.

In summary, the oft-quoted statement, "We learn to do by doing," is fundamentally sound. It suggests a truth generally recognized by psychologists. But, it does not follow, as is sometimes concluded, that some children are active and others are not, or that overt physical activities are of superior educational worth to intellectual activities. Rather, some children are more active than others, some schools emphasize certain types of activity and other schools other types, and the educational worth of activities is determined by the characteristics of the individual and the nature of the outcomes desired.

A VARIETY OF ACTIVITIES DESIRABLE

Schools have often fostered activities that are relatively valueless or actually detrimental. In traditional schools, the activities in which pupils are permitted to engage are often so restricted that educational possibilities are severely limited. Reading textbooks, preparing notebooks, memorizing facts, reciting, and performing routine experiments cover the range of activities in many schools.

This gives the child little opportunity for direct first-hand experience and thus omits from the educational program an important vitalizing force. Such restriction also overlooks fundamental biological needs of children. For example, it cannot be denied that the young child needs opportunity for movement. When activities involving movement are limited unduly a real hardship may be imposed on the child and a general physiological condition inimical to effective learning may be developed.

On the other hand, schools often have children engage in overt physical activities without recognizing the educational value of such activities. Not infrequently, schoolrooms are encountered in which a heterogeneous groups of unrelated activities is being carried on under the name of education, when it is obvious that the teacher does not see the educational value in these activities. Activity for the sake of activity appears to be the motto.

There is in such a procedure little educational merit, for as Mursell states, "... *it is not the activities themselves which produce learning; it is their quality, their content, their aim, their meaningfulness.*"

In practice, the effort should be to guide children in a wide variety of activities. Points of concern to the child should be approached from many angles. He should read, construct, discuss, interview, write, model, survey, experiment, visit, paint draw, build, dance, play, sing, observe, listen – use whatever types of activities are appropriate to deal with the situation with which he may be concerned. In brief, education should be liberated from the traditional concept of school activities and the curriculum should be enriched by employing any and all activities that will help realize those purposes of the child which are compatible with the aims of education.

APPROPRIATE ACTIVITIES

We have implied that some activities are desirable and others undesirable. Three points require consideration in determining the appropriateness of an activity.

In tee first place, an activity in which children engage should be one that they can recognize will help them achieve an end they desire to accomplish. Unless the child can see the relationship of his activity to a purpose he wishes to realize, the activity is largely meaningless and the child will engage in it only under compulsion. As Dewey points out, ". . . action done under external constraint or dictation . . . has no significance for the mind of him who performs it."

But if the child sees the relationship of an activity to his purpose and is able to estimate his progress toward realization of the purpose, he will tend to work persistently and to learn quickly.

In the second place, an activity should contribute to the realization of the aims of the aims of education. Many activities are not educationally valuable. These may be eliminated by testing their contribution to the aims of education. It is also important that a teacher recognize the particular contribution each activity in which pupils engage may make toward realization of the aims of education. With this relationship clearly in mind the teacher is in position to direct activities effectively. On the other hand, failure to recognize the educational worth of activities may lead to their performance in such a way that they are largely valueless.

In the third place, activities should be suited to the physical, mental, and emotional characteristics of the individuals who engage in them. Little children should not be required to sit quietly for long periods of time, when their physical development is such that they require frequent opportunity for movement Nor should they be expected to profit a great deal from activities involving vicarious experiences when they lack the background of first-hand experience which provides a foundation for interpretation.

Similarly, it should not be considered necessary to provide a preponderance of physical activities when maturity has changed the biological structure, or a preponderance of first-hand experience when a broad background has been developed to make vicarious experience meaningful.

It is equally important in selecting activities to give consideration to the attitudes children have already developed. For example, failure is almost assured for given children if activities are selected in which they have failed consistently at other times. Selection of activities which children dislike because of previous experience leads to efforts to evade the undertaking of which these activities are a part. Belief in the possibility of performing the activity successfully and a real desire to succeed are essential prerequisites for undertaking an activity.

AVAILABLE ACTIVITIES FOR EDUCATIONAL USE

There are many classifications of activities. We have already mentioned one, that is, division according to the physical or intellectual predominance in the activities.

Another classification, sometimes used in curriculum making, is *approach activities*, *developmental activities*, and *culminating activities*. This classification groups activities in terms of the relationship they hold to undertakings of the children. A particular activity may fall under any one of these headings in different situations. For exmaple, dramatizing a story might be an activity which stimulates children to find out a great many things about some point raised in the story and thus serve to initiate an undertaking; or it might be an activity employed to develop a plan the children had formulated after being stimulated from some other source; or it might be the means of bringing together in organized and culminating form a great many details brought out during efforts to realize a purpose. This classification is of value when the organization of instruction is considered, but a more detailed classification is of greater assistance in considering the availabiliiy, variety, and appropriateness of various activities for achieving pupil purposes.

There are a number of more detailed classifications of activities which have been employed in curriculum making. In studying such classifications it is found that the various headings are not mutually exclusive, that is, activities listed under one heading sometimes may classed almost equally well under another. This, however, does not detract from the value of the classification, since these classifications provide only a general means of checking the range of activities.

The classification as presented hereinafter gives a good indication of the major types of activities available for the use of the teacher. As in other classifications, it will be found that the groupings are not mutually exclusive. However, they do indicate the dominant characteristic of the various activities.

Activities Primarily to Secure Information. A great many of the activities engaged in, both in school and in other life situations, are for the purpose of securing information. In the traditional school, activities of this type have received major emphasis. However, the variety of such activities has been much more limited than is necessary. Reading textbooks and listening to lectures have been predominant means of securing information. In the illustrative list which follows other activities of real value are given.

A. Reading for information

B. Listening to lectures

C. Participating in conferences and interviews

D. Participating in discussions

E. Studying maps, charts, graphs, cartoons, pictures

F. Seeing slides, motion pictures

G. Conducting experiments

H. Taking field trips and excursions

I. Making surveys

J. Observing with regularity and care various phenomena

K. Collecting specimens

Activities Primarily to Organize and Present Information. As information is collected, it often becomes important to organize and present it to others so that it will be clear and understandable. These activites, of course, are carried on in close relationship with those to secure information. There are, in this group, a number of activities which greater attention than has been given them traditionally. Some, such as writing papers and making outlines, have no doubt been overworked.

A. Making charts, graphs, maps, cartoons, posters, friezes

B. Making booklets

C. Giving programs

D. Giving exhibits

E. Writing papers, articles

F. Making speeches and oral reports

G. Making outlines

H. Dramatizing

I. Debating

Activities Primarily to Facilitate Mastery of Skills. Activities to facilitate mastery of skills have received a large share of teachers' attention. Very often these activities are selected with inadequate consideration for economical learning. Much reliable information has been written about the wise use of this type of activites. In using teem it is especially important that they be meaningful to the child. Activities of this type are more limited in number than certain other types.

A. Reciting

B. Memorizing

C. Working practice exercises

D. Taking examinations and tests

Activities Primarily for Creative Expression of Material Objects. A great deal of emphasis has been placed in recent years on the importance of construction activities. The passing of much of the work of production from the home has emphasized the need for formal education to give children acquaintance with production processes. Also the needs of younger children for first-hand experience and for physical movement have led to emphasis in the lower grades on activities of this type.

A. Constructing play houses, play stores, play post offices, bird houses, insect cages

B. Making furniture and toys

C. Making cloth, rugs, dishes

D. Making clothing

E. Preparing and serving food

F. Gardening

Activities Primarily for Creative Expression. It is held by many students of American education that our schools have provided entirely inadequate opportunites for creative expression. The excessive routine and strict regimen of schools have resulted in inflexibility that suppresses the desire of children to express themselves creatively. One of the significant contributions of progressive schools has been to show the great possibilities for work of this type. Mearns, Coleman, and others have shown that children can produce things of creative value if they have the opportunity and sympathetic guidance. Efforts have been made in many public schools to introduce creative activities. As yet, however, relatively little progress has been made in this direction. The weight of formalism tends to perpetuate the mere preproduction of assigned material. Activities in this classification undoubtedly should receive increased attention.

A. Writing poems, stories, essays

B. Drawing and painting

C. Modeling, sculpturing, carving

D. Singing, and playing musical instruments
E. Composing music
F. Dancing
G. Giving plays and recitals

Activities Primarily for Recreation. The increase in lesiure time and unemployment has led to a strong emphasis in education on activities for recreation. Consequently, numerous activities in this classification have been added to the curriculum in recent years. Even so, it is still difficult for many teachers to realize that the primary purpose of such activities is enjoyment. Failure to realize this oftentimes causes these activities to be so directed that boredom rather than enjoyment results for the children. Activities in this classification will, no doubt, have an increasing place in the curriculum.

A. Playing games
B. Having parties
C. Listening to music
D. Looking at pictures
E. Reading stories, plays, and novels
F. Going to the theatre
G. Telling or listening to stories
H. Singing
I. Having clubs

CURRICULUM DEVELOPMENT AND PUPIL ACTIVITIES

Successful curriculum development depends to a marked degree on the guidance provided pupils in the activities they employ to achieve their purposes. Examination of courses of study suggests that often curriculum making has given little attention to this point. Traditionallly, courses of study have tended to ignore almost wholly pupil activities, centering attention on required subject matter and reference lists. Some recent courses of study, however, include many helpful suggestions on pupil activities. Such suggestions provide a valuable source of assistance for the teacher and indicate increased consideration of this problem as a part of curriculum development.

It is important that the activities suggested in courses of study be so arranged that the teacher can readily associate them with undertakings in which children may engage. A heterogeneous list often encourages teachers to have their pupils engage in unrelated activities. On the other hand, it is highly undesirable for the organization to be such that the teacher is inclined to use all of the activities suggested with a particular group of children in the particular sequence in which they are given.

The precise way in which suggested activities are organized and the points to which they are related depend upon the method used to define the scope of the curriculum. If the unit of work procedure is employed, activities, of course, are suggested for the units of work. On the other hand, in the social functions procedure are related to the aspects of the centers of interest selected for emphasis. In any case the arrangement should be such as to encourage the teacher to select from the lists of activities given those which will help his pupils to achieve their purpose, or which will suggest to him other more appropriate activities.

An illustration of the unit of work organization is provided by material from the Long Beach, California, 'Social Studies Course of Study for Junior High Schools.' The following is the list of principal types of suggested student activities for the unit, 'The Westward Movement and the Growth of Transportation and Communication :

1. Reading
2. Class discussion
3. Special reports
4. Committee work

5. Maps, graphs, and charts
6. Bulletin board
7. Debates
8. Illustrated projects
9. Dramatization
10. Slides

Special ativities suggested for use in connection with various problems in the unit follow :

Problem I

What movements and developments in Europe aided and encouraged discovery and exploration ?

Activities :

1. Show on a wall map of the Eastern Hemisphere the extent of the Mohammedan empire.
2. Be able to discuss two Crusades.
3. List the motives of the Crusaders.
4. Show on a wall map the crusading routes.
5. List the results of the Crusades with reference to the following :
    (*a*) Ruling of the Holy Land
    (*b*) Learning in Europe
    (*c*) Trade and travel in distant lands
    (*d*) Feudalism
    (*e*) Effect upon the life of the wealthy.
6. Johannes Gutenberg and the printing press,
7. Make a sketch of the world as we know it today. Show how the early map makers pictured the world.
8. Bring to class a compass and demonstrate its use.
9. Make an illustrated chart to show the relation

between and exploration in the fourteenth and fifteenth centuries.

10. Indicate on an outline map the type of regions which the trade routes traversed.
11. List products which were obtained from the East and show on an outline map the region from which each is obtained.
12. List the products which were returned from the West to the East.
13. Contrast by means of sketches, models, or cut-outs, the trading vessels of today with those of the Venetians in the Middle Ages.
14. Imagine that you are a Pilgrim who has just returned from the Holy Land. You have returned on a Venetian boat. Describe to the class the voyage from time of embarkation.

Problem II

What were the steps that led to the discovery of America ?

Activities :

1. Reports on Columbus and Prince Henry the Navigator.
2. List the characteristics of Columbus led to his success.
3. Sketch to scale or model in approximate proportion the 'Santa Maria' and the 'Leviathan'.
4. Dramatize "Columbus at the Spanish Court" before and after the first voyage.
5. Make an illustrated map showing the results of exploration up to the close of the fifteenth century.

6. Students write imaginary letters of Columbus or members of his crew telling of the voyage.
7. Motion picture "Columbus".

Problem III

What other important explorations and discoveries closely followed the discovery of the New World ?

Activities :

1. List the motives of the Spanish, Portuguese, French, English, Dutch in coming to the New World.
2. Make a list of the names of cities in United States which bear Spanish, French, English, and Dutch names.
3. Make a time line showing the period of exptoration...
4. Make an illustrated map to show what the early explorers and discoveres accomplished.
5. Collect pictures to show the influence of the Spanish on the architecture in the southwestern part of the United States.
6. Make a map of the New World showing the territorial claims of each of the European nations who engaged in explorations during the fifteenth, sixteenth, and seventeenth centuries.
7. Show by a series of maps the gradual unfolding of knowledge of the world from the period of the Crusades to the year 1700.
8. Reports on the following :
   (*a*) Voyage of Magellan
   (*b*) Cortez in Mexico
   (*c*) Conquests of Pizarro.
9. Show on a globe the line of demarcation and the routes of Magellan and Drake in cirricumnavigating the globe.

10. Describe the experiences of Marquette and Joliet as they explored the Mississippi regions.

11. Dramatize

    (*a*) The planting of the English flag

    (*b*j Hudson entertaining the Indians on board ship

    (*c*) Balboa discovering the Pacific.

Problem IV

What dangers and difficulties stood in the way of the settlement of North America ?

Activities :

1. Reports

    (*a*) Seafaring today compared with seafaring in colonial times

    (*b*) How Uncle Sam provides for the Indians.

2. Make a map showing the early tribe locations of Indians in the territory now included in the United States.

3. Sketches, cut-outs, or models showing the development of seafaring crafts up to the time of the Mayflower.

4. Students may select for developing an Indian project, either a single tribe or the combined tribes of one section....Each student should prepare some form of class presentation of his project.

5. Students may bring to the classroom for an exhibit a collection of any Indian articles which they happen to own.

6. Collect for the bulletin board clippings from magazines and newspapers on the Indian, past and present.

7. Make a collection of Indian pictures for classroom display.

Problem V

Why did the English begin to settle in North America ?

Activities :

1. Reports
    - (*a*) The Reformation
    - (*b*) Oliver Cromwell
    - (*c*) Life in England at the beginning of the seventeenth century.
2. Life the reasons for colonization by England.

Illustration of the activities suggested by the social functions approach is provided by the Virginia course of study for elementary schools. Activities suggested for only one aspect of a center or interest are given. Similar lists are given for other aspects in the course of study.

Center of Interest

Effects of Machine Production upon Our Living

Aspect of Center of Interest : How does machine production increase the quantity and variety and change the quality of goods ?

Suggestive Activities

Reading about and discussing leaders of American industry

Writing biographies of men responsible for changes in manufacturing

Reading about, discussing, and reporting on the development of the factory system of producing goods

Making a motion picture showing the change from the domestic to the factory system

Discussing and making reports on the work of the master craftsmen, as goldsmiths, lace makers, and weavers

Reading about and discussing the growth of cities

Making individual bar graphs to show the increase in population from 1890 to 1930 of a large industrial city of the United States

Experimenting with and discussing the six simple machines that help control natural forces : lever, inclined plane, wedge, screw, wheel and axle, and pulley

Discussing the physiological differences between hand and machine labor.

Making a time line showing the evolution of the machine

Reading about and discussing "sweat shops", where they are located, who works in them, how they affect the lives of workers, and the price of commodities they manufacture

Taking excursions to museum, factory, railroad shop, steamship line, where old and modern types of machines may be seen

Reading about, discussing, and reporting on the ways that human labor co-operates with the machine in modern industrial plants to assemble finished articles

Making reports on visits to industrial plants

Reading about, discussing, and reporting on the sun, moon, planets, and stars as revealed by the use of the machine

Visiting available experiment stations, such as those dealing with seed, fertilizer, feel, soils, and crops

Inviting country demonstration agent to demonstrate modern methods of canning goods and to discuss canning budgets for families

Inviting the county agent to visit the school and give a talk on "Why Rotate Crops ?"

Reading about and discussing the effects of machines on preserving and canning goods

Reading about and reporting on the history of tools and machines used in the production of foodstuffs

Making a graph showing by ten-year periods from 1900 to 1930, inclusive, the increased production of agricultural products resulting from the use of machinery

Making a pictorial map of the leading agricultural products of the United States

Making horizontal bar graphs to show the use of land in the community

Reading about and discussing the development of farm machinery

Making a series of large paintings illustrating the evolution of methods of agriculture

Reading about and discussing the changes in rural life as a result of the machine

Collecting and exhibiting pictures to show how machines have influenced dress in the past century

Reading about, discussing, and reporting on processes used in making cloth

Testing and washing cloth

Dyeing cloth by primitive and commercial methods and comparing results

Reading about and discussing the life history of the silkworm

Making hand looms and weaving bags and rugs to demonstrate changes that have been brought about by the machine

Visiting an industrial plant such as hosiery mill, textile mill, and shoe or furniture factory to see how rapidly and cheaply articles for home consumption can be produced

Making a map of the United States, locating the leading textile mills and discussing the reasons for their location

Reading about and discussing the effects of the machine upon the production and consumption of synthetic goods (rayon)

Writing to industrial companies for exhibits and information on rayon

Writing and presenting a pageant about the development of the texile industry

Visiting antique shops, museums, and department stores to observe old glassware and standardized reproductions

Discussing the reasons for the increased quantities, standardized colors, and patterns of glassware

Exhibiting antique glassware and pottery with modern designs and reproductions to show the contrast and the similarity of design effected by the machine

Collecting pictures showing the development of the glass industry

Making the or pottery utensils to contrast them with standardized production of the ceramic industry

Reading about and discussing the processess involved in the lumber industry

Making a chart showing the place Virginia occupies in the production of lumber and other raw matierials

Collecting pictures and data on the "house of tomorrow"

Discussing and reporting on the contributions of Bessemer and others to the steel industry

Reading about, reporting on, and discussing the principles of heat expansion and contraction in connection with modern steel construction

Collecting samples of machine-made building materials for homes and discussing their merits

Making sketches to show evolution of homes from cave days to modern times

Exhibiting pictures and samples of floor coverings, presenting the advantages of types illustrated

Reading about and discussing mass production of materials and designs in paper, cloth, furniture, etc.

Examining pictures of the beautiful crafts of earlier times, as the Mexican handicrafts, Greek vases, tapestries of the Middle Ages, gesso decorations of the Renaissance, jewelry of the Egyptians, etc., to appreciate the beauty of handmade things

Reading to find what health convenience have been made more available as a result of the machine

Reading about and discussing the factors other than the machine that have assisted in mass production

Interviewing a chemist to get information on how petroleum is converted into various products

Reading on, and discussing the origin and uses of electricity

Visiting an electric plant to see how electricity is made

Examining an electric dry cell to learn the use of chemical materials in the production of power

Making a shocking machine to show the strength of electric current may be increased.

CAREFUL EVALUATION OF ACTIVITIES NEEDED

Examination of the activities suggested in courses of study and observation of the work of curriculum committees lead to the belief that activities are often suggested without an adequate basis of trial. Many activities are trival and some are actually undesirable. Others of considerable educational value are often overlooked. There is need for more carful evaluation and trial of activities before teachers are generally encouraged to use them. This is one of the tasks to which greater attention should be given in curriculum development.

9

Curriculum Problems Raised by Constructive Criticism

Perhaps no other point has been an issue of so much dispute in educational theory as the treatment which should be accorded subject matter in instructional organization. Consequently, as the curriculum worker approaches the problem of dealing with subject matter he is projected into an area of conflict in which he must make choices with the full realization that whatever his position there will be those who hold that the decision is wrong.

The point that should receive primary consideration, however, is the development of an approach to subject matter that is consistent with procedures employed in other phases of curriculum development. All too often workers enter courageously upon the task of reorganizing the curriculum in fundamental ways only to deal with subject matter in a manner obviously incompatible with procedures in other phases of the program.

This is due to the fact that traditional practices of dealing with subject matter are thoroughly entrenched and that vested interests have a considerable stake involved. The subject matter specialist and the textbook maker are sometimes loath to see basic changes made in the organization of subject matter. Many times is from fear that values of fundamental worth will be lost, but often it seems to be because of the intellectual effort and the material cost that such change involves.

The curriculum worker who is to deal successfully with the problems centering around subject matter must have a clear understanding of certain basic concepts which explain the nature, function, source, and use of subject matter. Only through mastery of these concepts will he be able to project a program of curriculum development that is consistent and thorough-going.

NATURE OF SUBJECT MATTER

Subject matter is popularly looked upon by teachers as being the facts, generalizations, and information contained in text books. The subject matter of American history, for example, is, to many teachers, merely the material in the American history text; the subject matter of algebra, the material in the algebra text; and similarly in other subjects. A slightly broader concept, sometimes held, is that subject matter is composed of all the facts, generalizations, and information in a particular subject or in all subjects. According to this concept, facts about American history would be subject matter of American history even though not included in the textbook, and similarly with other fields. Usually this letter point of view is about as far as teachers go in breadth of concept of subject matter. Yet neither of these concepts presents an adequate notion of the nature of subject matter.

The philosophical view of subject matter is presented by Dewey as follows: "It (subject matter) consists of the facts observed, recalled, read, and talked about, and the ideas suggested, in course of a development of a situation having a purpose."

This concept is elaborated by the following discussion :

> In the traditional schemes of education, subject matter means so much material to be studied. Various

> branches of study represent so many independent branches, each having its principles of arrangement complete within itself...
>
> Later on a chapter is devoted to the special consideration of the meaning of the subject matter of instruction. At this point we need only to say that, in contrast with the traditional theory, anything which intelligence studies represents things in the part which they play in the carrying forward of active lines of interest. Just as one "studies" his typewriter as part of the operation of putting it to use to effect results, so with any fant or truth.
>
> It becomes an object of study – that is, of inquiry and reflection – when it figures as a factor to be reckoned with in the completion of a course of events in which one is engaged and by whose outcome one is affected. Numbers are not objects of study just because they are numbers already constituting a branch of learning called mathematics, but because they represent qualities and relations of the world in which our action goes on, because they are factors upon which the accomplishment of our purposes depends. Stated thus broadly, the formula may appear abstract. Translated into details, it means that the act of learning or studying is artificial and ineffective in the degree in which pupils are merely presented with a lesson to be learned. Study is effectual in the degree in which the pupil realizes the place of the numerical truth he is dealing with in carrying to fruition activities in which he is concerned.

This concept of subject matter is obviously quite different from the traditional one. From this point of view what is or is not subject matter can be determined only in terms of specified individuals at specified times. The facts, generalizations, information, or objects an individual uses in activities to promote a purpose which he is endeavoring to realize compose his subject matter. When applied to classroom situations we see that a given fact or item of information such as the sum of two and six may be subject matter to some children in a class and not to others. Use and understanding determine what is subject matter for a learner than memory. Thus, classes that memorize a great many facts may not be gaining control of subject matter at all.

If this concept of subject matter is accepted, there is of course a body of material which a given person does not use but which, nevertheless, is available for use if the need arises. This body of material is composed of facts, information, principles, and generalizations which are organized into fields of knowledge. When so organized they represent the content of subjects and are the subject matter of adult specialists.

These specialists have found such materials significant and useful, and because the materials possess these qualities they can be designated as subject matter. Thus, when reference is made to the subject matter or content of a particular field, the allusion is to the subject matter of adult specialists in that field. Such subject matter represents a storehouse or source of supply upon which the child may call for subject matter suitable for his use.

Thus, from the standpoint of the teacher interested in directing the growth of children, the subject matter of the adult specialist is potential subject matter for the child. That is, it may be used by the child if need arises and, if used with meaning and significance, will become the child's subject matter.

A further point should be made clear. In the preceding paragraphs we have spoken of the subject matter in an organized field or subject. This may suggest that only materials included in an organized field may rightly be considered subject matter. In fact, many curriculum workers appear to operate on this assumption. The fact is that whatever in the way of facts, information, generalizations, or materials are employed to forward a desired end is subject matter for the person using it. Organization of these materials into logical relationships does not modify the inherent nature of the materials.

SOURCE OF SUBJECT MATTER

Consideration of the source of subject matter often clarifies thinking about its nature and function. If we look at subject matter from a long-time point of view we find that its source is the accumulation of solutions to problems and means of adjustment developed by man down through the ages to deal with difficulties which he has encountered. In the beginning these solutions were simple in nature. An imaginary account of the way in which these beginnings were made is given in a recent bulletin :

> A shaggy man crept from his cave and blinked in the morning sunlight, as he had done almost every morning of his life.
>
> But this morning his eye caught a cluster of luscious fruit, dangling from the bough above his head. He wanted that fruit for breakfast, so he licked his lips and stretched out his long hairy arm to get it.
>
> But the distance from the ground to the fruit was greater than the distance from the ground to the lips of his upstretched fingers. In other words, his arm wasn't long enough to reach it. So he crouched and jumped, but the fruit dangled higher than he could leap.
>
> Next, he threw a stone; it missed and went crashing through the branches.
>
> Then an historic event occurred. His hand happened to grasp a stick. As he lifted it up to hurl it, the far end grazed the branch. A new idea began to take shape in his groping brain. He lifted the stick again and the same thing happened. He felt it touch the branch he

couldn't reach. Fascinated, he wavered the stick in air till it touched the fruit, and down dropped his breakfast.

And thus, thousands of years before recorded history, a primitive ancestor of the human race found out that he could use a club to increase the length of his arm.

Solutions to problems in many cases were doubtless reached in the manner described here; but as time went on and solutions were passed from generation to generation, man gained the idea that conscious effort could be employed to resolve his difficulties. The result was an increase in the variety, and an improvement in the quality of solutions to problems devised by man.

These solutions consequently became quite complex in nature. They now are extremely intricate and complicated. Looked on as a body or composite, they are frequently referred to as our group culture or race heritage. The group culture or race heritage may take a variety of forms. It may take the form of accounts, descriptions, aesthetic expressions, customs, laws, principles, techniques, formulas, doctrines, and social institutions. These forms of the group culture, it will be noted, include intellectual and emotional adjustments to social problems.

There is another large and important phase of race experience that takes the form of material objects such as a typewriter, a baseball, an automobile, an ax, or a radio. This part of the group culture is often referred to as the material aspect. This classification serves to indicate the breadth of the group culture. That is, all means of adjustment developed by the race, whether intellctual or material in nature, are a part of the group culture.

The importance of the group culture can hardly be overemphasized. It is the race's storehouse; it is the working capital of the present. As such it is the source of all subject matter. Whenever any phase of the group culture is used by an individual that phase becomes his subject matter. Frequently, we fail to realize how completely we depend on subject matter so conceived. On the other hand, we often fail to profit as much as we might from consideration of race experience.

Education has a major responsibility for developing dispositions and techniques that lead the individual to select and to use subject matter wisely. This end is far from realized at present. Very few people would undertake a flight to the stratosphere without thoroughly studying the experiences of others in such an enterprise. Yet every day people engage in social undertakings of great consequence to our group life without first studying the experiences of others in similar undertakings. Boards of education seldom base their activities on a careful study of the past experience of boards and superintendents in operating schools. Many high school teachers and faculty members of higher institutions are content to undertake the task of teaching without a study of past experience in teaching. Yet it should be obvious that study of these experiences of others and the solutions to difficulties which they encountered would be of as much assistance and are just as indispensable to intelligent action as study of past experience in making flights to the stratosphere.

Thus, the use of race experience as a guide for present action of all types is a phase of the application of intelligence to our living. It should not be overlooked, however, that race experience becomes meaningful and significant only in terms of our present undertakings. Race experience then, although indispensable for intelligent action, contributes to education only as it aids the individual to meet his needs.

BASES OF SELECTING SUBJECT MATTER

The task of selecting subject matter for use in the instructional program is a difficult one. Clearly, a child during the course of his school life can use only an infinitesimal part of the race experience. Even in case of the most broadly and thoroughly educated adult there are great fields of knowledge about which he is ignorant. It is also quite evident that he who attempts to gain thorough mastery and use of a given phase of the group culture must limit that phase very strictly and be content to know little outside of his chosen speciality.

Thus is raised the problem that has plagued men interested in education for many generations: What knowldge is of most worth? Out of all the valuable things that could be learned, what shall I choose? And, even more pertinent, what shall be chosen for the immature person under the guidance of the school? This is the problem upon which those responsible for curriculum marking have expended more effort and thought, perhaps, than any other.

Before considering the bases available for selecting subject matter, it may be well to emphasize in this connection the implications of concepts of subject matter developed heretofore. From the discussion of the nature of subject matter it should be clear that it is impossible to determine what will be the subject matter for a particular child or group of children until the actual experiences are carried forward. Consequently, the curriculcm worker can only select from the great mass of material in the race heritage that part which he believes may appropriately become subject matter for the child. That is, he selects from the subject matter of the adult specialist potential subject matter for pupils. We now turn to a consideration of the bases on which this selection may be made.

The control that should be exerted on the selection of content by the aims of education and by the scope of the curriculum has already been considered in Chapters 6 and 7 Whatever the specific basis or bases for selecting potential subject matter, their use should be consistent with the procedures accepted for defining aims and scope in so far as these procedures relate to content.

There are four principal bases upon which the selection of potential subject matier may be made :

1. significance to an organized field of knowledge;
2. significance to an understanding of contemporary life;
3. adult use; and
4. child interest and use.

The first two of these bases rest largely on tradition and judgment. The last two may be determined by scientific procedures.

The significance of particular items of content to an organized field of knowledge has been, and still is, the most generally used basis for selecting potential subject matter. This procedure assumes at the outset, of course, that the curriculum shall be constricted within the recognized logically organized fields of knowledge. Consequently, the first step is to define these fields. Each field is treated independently. The means of selection may vary somewhat. The total content in an organized field of knowledge may be used as a starting point.

A person who knows this field and understands the relationships involved—a subject specialist - selects from the field a portion of organised subject matter to be assigned to the particular phase of the educational program under consideration. The selection may be in terms of the most important materials in the entire field, *e.g.*, in the case of world history; or it may be by selection of of the most important material in segments of the subject, which segments may be arranged in a logical sequence *e.g.*, in the case of ancient history, medieval history, and modern history.

In either case the criterion for including a particular item of material is its importance to an understanding of the subject. Certain events and development are retained because historically they are more important than other events and developments. This method of selecting subject matter is the one generally employed by subject specialists in preparing textbooks and syllabuses.

The second basis for selecting subject matter is the significance of the material to contemporary life. As in the case of the foregoing basis of selection, this basis rests largely on judgement. It is employed much more generally in the selection of materials for some courses than for others. For example, the course introduced in comparatively recent years in Problems of American Democracy selects subject matter with reference to significant contemporary problems. Some general science courses emphasize the relation of science to significant problems, and consequently materials selected for such courses are chosen on the basis of their significance to contemporary life. On the other hand, the idea of a survey of science, which dominates other general courses, leads to selection of materials in terms of their significance to the fields of science.

The third basis of selecting subject matter is adult use. This basis has been widely studied, numerous reaches having been made to facilitate its application. There are some three or four specialized techniques by means of which this basis is employed. It has been used especially in selecting facts and skills which receive emphasis. Consequently its application has been largely in relation to subjects such as spelling, airthmetic, and reading.

The principle of selection upon which this procedure rests was employed in a study as early as 1582. In that year a list of words was published that had been prepared by Richard Mulcaster, an English schoolmaster. His list was for the purpose of standardizing English spelling. It contained over 8000 words. Words most commonly used were selected for inclusion in the list.

In 1904 a study of this type was made a definite basis for curriculum development. At that time Knowles, by analyzing passages from the English Bible and from various authors, prepared a list of 353 most commonly used words. This list was employed by him in developing a system of reading for the blind. In 1911 Eldridge made an analysis of the vocabularies of 250 different articles taken from four issues of four Sunday newspapers published in Buffalo.

On the basis of this analysis he prepared and published a list of 6000 common English words. In 1915 Ayres reported a study of the spelling vocabularies of personal and business letters. The study involved tabulation of the words used in 200 short letters written by 200 people. The total vocabulary used was found to be 2001 words. Other studies of this type followed with increased frequency and broadened scope. The influence such studies might exert on selection of content for the curriculum was shown by a scale developed by Ayres for measuring spelling ability. He used a number of studies of most frequently used words to develop his word list. It is estimated that these studies through similar sources for influence reduced the spelling vocabularies required of children by 25 to 50 per cent.

Studies of adult use of arithmetical abilities followed shortly after the initial work in spelling. One of the earliest of these was made by Wilson in 1917. Children in the sixth, seventh, and eighth grades collected during a period of two weeks the arithmetic problems which their parents solved. These problems were classified and studied with reference to the content of the school program in arithmetic. In 1919 Wilson followed this study by another of similar type but of much more extended scope. Problems encountered by 4068 persons were analyzed. In 1922 he applied his method of determining the airthmetic needed fo social and business use to the development of a course of study. This was done in the Connersville, Indiana, schools.

This technique is readily applicable to the field of language and consequently there have been a number of studies of language activities of adults. In 1921 Searson reported a study of the language needs of 3600 persons in twelve different occupations.

This study shows the relative emphasis placed in writing, reading, and speaking, in transacting the affairs of life. In 1924 he reported a more extended investigation relating to the language skills necessary for ordinary success in life. He listed twenty-saven Language skills and consulted 7752 persons in forty-two states engaged in a variety of occupations concerning their need for these skills. His findings indicate the several skills persons in various occupations and trades found essential in their work.

In 1926 a committee of the National Council of Teachers of English, under the chairmanship of Clapp, made an even more extended study of adult needs in language. A survey was made of the types of language activity most used and most important in daily life, and the degrees of difficulty found in various activities. Two thousand six hundred and fifteen persons in 300 towns in thirty-five states were included in the survey. Results are reported by education groups, thus showing what differences if any, exist between college graduates, high school graduates, and grammar school graduates.

Studies of this type are numerous. Several of the more significant ones are summarized in Table 1. Those reported in the foregoing illustrations serve only to indicate the way in which the use made bu adults of certain skills and information is secured as a basis for determining the content of the curriculum.

Another technique by which adult practices are made the basis for developing the curriculum is known as "activity analysis." This technique, developed By Bobbitt, seeks to base the selection of content of the curriculum on a comprehesive analysis of the activities performed by adults. It is assumed that a study of the activities in which adults actually engage will indicate what activities children should be taught to perform. For example, it may readily be seen that adults engage in a wide variety of activities, such as, reading newpapers, writing letters, walking, caring for the teeth, and avoiding accidents.

A comprehensive list of such activities, according to this technique, determines the objectives of education. Stated in such specific terms the objectives determine to a large measure the content or subject matter to be used. This technique was developed most completely in the Los Angles curriculum program some ten years ago. Since that time application has been more limited, the findings of activity analyses being used in conjunction with other procedures.

The "job analysis" technique is another procedure which implies the selection of subject matter by reference to adult needs. This technique is in fact closely related to "activity analysis." It is employed in developing curricula to prepare students to engage in particular occupations or professions. The activities involved in carrying on a particular occupation or profession are analyzed in detail and the student is trained in the performance of these activities. This, of course, determines in large measure the subject matter or content to be employed. The most extensive application of this technique is in connection with the *Commonwealth Teacher-Training Study* in which the activities of teachers are analyzed in detail and proposed as a basis for developing a suitable curriculum to train prospective teachers.

Checkinng the subject matter employed in school programs against that used in adult life has in many cases resulted in desirable outcomes. Much relatively useless material has been eliminated by this means. It must be recogninzed, however, that this by no means provides a solution to the problem of selecting content. There always remains the basic and really fundamental issue as to whether the activities performed by adults are desirable. Adults engage in many undesirable as well as desirable activities. Bode points this out very clearly :

> No scientific analysis known to man can determine the desirability or the need to anything. Statistical investigation, for example, may show that a certain number of burglaries occur annually in a given community, but it does not show whether the community needs a larger police force or more burglars. That is altogether a ques-

Table 1

Selected Studies of Adult use which Suggest a Basis for the Selection of Subject Matter*

Subject	*Author*	*Source*	*Problem*	*Technique of Study*	*Findings*
1	2	3	*4*	*5*	*6*
Arithmetic	Bowden, A.O.	"Consumers Uses of Arithmetic," Contribution to Education No. 340, Teachers College, Columbia University, 1929.	To determine the actual uses made of arithmetic in adult social life, exclusive of vocational uses.	"Answeraires" containing problems adults might use outside of their vocations were submitted to a representative group of adults to check the ones used.	It was concluded that 85 per cent of the arithmetic now taught is unnecessary. This conclusion rests upon three assumptions : that present practice is desirable; that adults are conscious of all the arithmetic they use : and that all types of arithmetic are equally well remembered.

Arithmetic	Dale. Edgar	"An Unsolved Problem," "Educational Research Bulletin 8 : 355-57, November 6, 1929.	To determine the arithmetic necessary to the lay reader of investment materials.	An analysis was made of 310,000 running works of investment literature. Two-thirds of the materials related to stocks and bonds and one-third to banking, insurance, and real estate. A comparison was made with four arithmetic textbooks.	Textbooks fail to emphasize sufficiently certain words appearing with high frequency in investment materials. Likewise, words appearing frequently in textbooks rarely or not at all were mentioned in investment materials.
Social Science	Bagley, W.C.	"The Determination of Minimum Essentials in Elementary Geography and History," "Fourteenth	To find the types of references to geographical materials in certain printed msterials.	Samplings were taken such magacines as the "Outlook" and the "Literary Digest."	The most frequently countries, continents rivers, gulfs, seas, and straits were given The reference to presidents. wars, etc. were listed. References to wars were more frequent than any other type of historical events.

*Certain studies are included in the table because of their historic interest.

(*Contd.*)

1	2	3	4	5	6
Social Science	Branom. M.E. and Reavis, W.C.	"The Determination and Measurement of the Minimum Essentials in Elemetary School Geography, "Scventeenth Yearbook," N.S.S.E. Part I, 1918 pp. 27-39.	To select a list of minimum essentials in geography.	Fifty countries selected from the Statistical Abstracts, 1915 were ranked according to certain criteria.	According to these analyses the relative importance of these countries are listed. The United States, Great Britain. Germany, France, India, Austria. Hungary, Russia, Canada and Italy are most important.
Social Science	Thomes, J.B.	"A Study in Minimum Essentials of Geography for the Elementary Schools' M.A. Thesis Indians University, 1919.	To determine a list of minimal essentials in elementary geography.	An analysis was made of newspapers to determine the geographical allusions made in them.	The analysis of 88 pages of such printed matter revealed 5,027 geographical references. Cities countries, and continents are listed according to frequency.

Social Science	Aldermen, G.H.	"What an lows Layman should Know about Courts and Law," "School Review," 30 : 360-364, May, 1922.	To determine the knowledge of courts and law valuable to the layman.	The records of one court from 1907-1909 were examined to determine the charges that bring the layman to court.	Instruments involving the principles of contract, writs or decrees from the court, and principles of torts were the main items that brought the layman into court.
Social Science	Cocking, W.D.	"The Attitude of the Public to the Teaching of Citizenship." M.A. Thesis, Univ. of Iown, 1923,	To determine what laymen regard as important topics in citizenship.	Representative citizens in various occupational groups were asked to submit topics for a citizenship course.	Some 593 people suggested 4,728 topics which were divided into 247 distinct classifications.
Social Science	Washburne, C.W.	"Basic Facts Needed in History and Geography : A Statistical Investigation," Twenty-Scond Yearbook," N.S.S.E., Part II, 1923, pp. 216-33.	To find what facts children must know in order to be reasonably intelligent concerning the	Analyzed four literary periodicals, five popular fiction periodicals, five popular fiction periodicals, and four newspapers. Samples of each were made	Over 81,000 allusions were recorded and arranged in frequency order. The relative importance forms an objective basis for a fact course in history

(Contd.)

1	*2*	*3*	*4*	*5*	*6*
			persons, places and events to which allusions are frequently made.	periodically between 1905-1922 so that no period would be missed. Every allusion to a person, place, date, or event was recorded.	and geography, according to the author.
Social Science	Rugg, Harold, and Hockett, John	"Objective Studies in Map Location, Social Science Monograph No. 1, Lincoln School of Teachers College, 1924.	To determine the relation importance in contemporary life of map locations of all kinds.	Eight criteria were employed to determine rank order lists of cities, regions, rivers, mountains countries, islands, etc.	The first 30 cities in importance in the United States and the first 50 foreign cities are listed. The 30 most important regions of the World are listed. Likewise the most important rivers mountains, bodies of water, and islands are given.

General Science	Washburne, C.W.	"Scientific Method in the Construction of Schools Textbooks," World Book Co., 1924.	One phase of the study was to determine what applications of science are commonly made in everyday life.	Experiences were collected from adults involving practical applications of science. These were added to a list of children's questions to formulate a master list.	The curricuriar elements found were gravitation, molecular attraction, heat, conservation of energy radiant heat and light, sound magnetism, and electricity, mingling of molecular, chemical change and solution and chemical action.
Biology	Finley, Chas, W. and Caldwell, Otis W.	"Biology in the Public Press," Lincoln School, Teachers College, 1923.	To determine the types of biology now going through the public press.	Complete Issues of 11 newspapers for June, 1921, & 3 of the same & others for November, 1921, were analyzed for reference to biological materials. The 17 full months' issues gave a total of 492 different papers with an estimated 13,796 pages.	Some 3,061 biological articles with a total length of 25,500 inches, or an average of 8.3 inches were found. The classification according to space was in the order of health, animals, plants, food, organization of producers, nature, evolution and fiction.

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*
General Science	Curtis, F.D.	,'Some Values Derived from Extensive Reading of General Science," Contribution to Education No. 163. Teachers College, 1924, pp. 10-27.	To determine what sort of scientific knowledge is demanded for an intelligent reading of the public press.	Six hundred thirty articles from 6 representative newspapers were added to Finley and Caldwell's list and all were analyzed according to function, method of treatment, and content.	The results indicate a need for the broadest possible training in general science to understand the science in the press. and a need for a course to train for newspaper science, reading. The scientific terms indicate an enormous range of vocabulary found in the press.
Language	Clapp. John M.	"Place and Function of English in American Life," "School and Society, 23 : 424-5, April 3, 1926.	To determine the language activities used in Amerian life.	A survey was made of the language activities of 2,615 persons in 300 towns in 35 states which were used and most important in their daily life.	The activities are summarized under the following heads : conversation, public speaking, writing, reading, and listening.

Language	Johnson, Roy, L.	"Determining Standards in English Composition" "School Review, 36 : 757-67, Dec. 1928, and 37 : 44-48, January, 1929.	To determine the expressional situations in ordinary experience both in school and out.	A detailed cataloguing was made of experiences to discover the functional character of such activities as group discussions, formal and informal talks, keeping personal memoranda, giving directions, etc. Interviews, questionnaries, selected readings, and individual difficulties were used in determining the final list of traits.	A list of 54 traits is given which is supposed to describe a good conversationalist. Difficulties found by 35 experienced persons in roundtable discussion are listed and a final list offered.
Language	Matravers, C.H.	"A Corrective Language Program," "The English Journal," 18 : 564-570,	To determine the comparative usefulness of conventional forms from	Senior high school pupils doing stenographic work made reports of conver-	It was found that accuracy in 18 forms of usage would eliminate 63.8 per cent of the actual errors.

(*Contd.*)

1	2	3	4	5	6
		September, 1929.	the standpoint of social utility.	sation they heard both in school and out. From these 107,000 words, both right and wrong, were tabulated. Social usefulness indexes were established and errors weighted.	The indexes of social utility ranged from, 30.7 per cent for ain't to 0 per cent for the past tense of of the verb lie.
Spelling	Knowles, J.	"The London Point System of Reading for the Blind, privately published in pamphlet form, London, 1904.	To develop a list of words for blind students.	Analyzed passages from the English Bible, and various authors containing 100,000 words and tabulated them on a basis of frequency.	The result was the establishment of a list of 353 words which with their repetitions accounted for three-fourths of the total number.

Spelling	Eldridge, R.C.	"Six Thousand Common English Words, privately published in pamphlet form in Niagara Falls New York.	To determine the words used in the press.	Analyzed 250 articles from 2 pages each of four Buffalo newpapers and made a freequency distribution cf the words used.	The author found 43.980 running words and 6.002 different words, excluding proper nouns and numerals. The first 250 constitute the chief Ehglish sentence forming words and the first 750 including the repretitions constitute three-fourths of all words tabulated.
Spelling	Thorndike, E.L.	"Work Knowledge in the Elementary SOhool," "Teachers College Record, 22 : 334-370, September, 1921.	To determine the words most needed for instructional purposes.	Forty-different sources were used in compiling the list, among which were children's literature ; the Bible and English classics, books about cooking, farming, trades, and the like : newpapers; correspondence etc. The composite list was graded for frequency, range, etc.	Following this technique a list of 10,000 words was chosen. The list is keyed to show the position of each word. The list aids the teacher in telling how important a word is and the relative difficulty.

(*Contd.*)

1	2	*3*	*4*	*5*	*6*
Spelling	Horn, Ernest	"A Basic Writing vocabulary," University of Iowa, Monographs in Education, First Series, No. 4.	One of the four purposes is to made available a list of the 10,000 words most often used in writing done in the United States outside of the school.	A compilation was made of available word studies. A very elaborate set of rules was drawn up to serve as a standard in weighting each word in the list. The number of different sources was 65 producing 5,136,816 running words.	The list of 10,000 words is given, together with a key for reading the weight assigned. The value to teachers of spelling is pointed out as furnishing a basis for selecting words to be taught, for grading the course of study, for aid in method and to serve as a basis for testing.
Home Economics	Arnquist, Ines F. and Roberts, Evelyn H.	"The Present Use of Work time of Farm Homemakers," State College of Washington, Agriculture Experiment Sta-	To determine the time spent and the conditions of work of Washington farm homemakers.	Detailed records kept by homemakers for seven consecutive days during a week which they considered typical of the win-	Most of the homemakers do all the cooking and baking, laundering, cleaning, etc. Homemaking calls for managing ability and a fund of information and skill in workmanship

		tion, "Bulletin, No. 234, July, 1929.		ter and summer season.	in different kinds of work.
Home Economics	Kugel, Daiey Alice	"The Opinion of Perents Regarding the Teaching of Family Relationship," "Journal of Home Economics, 21 : 1-6, Jan., 1929.	To determine the family relationship ropics to be includdd in home economibs.	A questionnaire containing 53 items divided into 5 categories was submitted to parents in 14 states.	Twenty-seven per cen approved every topic, 10 per cent disapproved of only one and 46 per cent favored the inclusion of 50 of the 53 topics. The 2 most objectionable topics were companionate marriage and limiting the size of the family.

> tion of what sort of community we may happen to want. Or to take Bobbitt's own illustration, a scientific analysis would doubtless show that a reading ability is necessary for the conduct of many of the complicated operations in civilized society. But whether it is desirable that these operations should be carried on the deponent saith not. Old Governor Berkeley of Virginia—God rest his soul !—was of a negative opinion. The notion that ideals can be evolved from a process of collecting environmental facts is just another of the many delusions to which our sinful human flesh is heir.

Adult use as a criterion for selecting content also overlooks the influence of changing conditions. The activities in which adults engage may not be suitable at all for children when they become adults. These basic weaknesses of adult use as the basis for selecting subject matter to be included in the curriculum have been emphasized in a number of sources.

The fourth basis upon which content may be selected is children's interest or use. It was pointed out there that numerous efforts have been made to discover what type of reading material children are interested in, what subjects and topics are of interest to them; children's preferences for colors and types of pictures, and their preferences for play and recreational activities. These studies have significance for the selection of content, since they give at least a general indication to the curriculum worker of the materials children use with interest. A tabulation of some of the more important studies of this type is given in Table 2.

Some studies have been made to determine the type of material children use voluntarily. These have been made principally in connection with the language usage of children. For example, more recent studies in spelling have included word counts of children's compositions. These studies have been used as a check on the words included in spelling lists.

Table 2

Selected Studies of Child Interest which Suggest a Basis for the Selection of Subject Matter*

Subject	*Author*	*Source*	*Problem*	*Technique*	*Findings*
1	*2*	*3*	*4*	*5*	*6*
Reading	True, M,B.C.	"What My Pupils Read" "Education,," 10 : 42-45, September, 1889.	To determine the books read by the pupils in school.	A record was kept of the books checked out for home use that had not been assigned.	The following books were used most. frequently "Little Women, Eight Cousions, An Old Fashioned Girl, Story of a Bad Boy, Soldiers and Patriots, and Under the Lilacs.
Reading	Vostrovsky, Clara	"A Study of Children's Reading Tastes," "Pedagogical Seminary," 6 : 523-35, December, 1899,	To ascertain the general reading taste of school children before any organized effort has been made to direct it.	A questionnaire was given to children including the following questions : Do you take books from the public libray ? If so, how often ? What was the name of your last book ? Why did you take it ? How did you like it ?	The percentage of pupil taking books increases from 10% at 9 years of of age to 80 per cent at 19. The books most frequently drawn were juvenile fiction, general literature, and history. Certain sex differences are pointed out.

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*
Reading	Abbott, Allan	"Reading Tastes of High-School Pupils." "School Review, 10 : 585-600 October, 1902.	To determine the books liked by high school pupil.	Books that appeared on the Harvard and the National Education Association Committee on College Entrance Requirements lists were rated by high school pupils on a three point scale and omissions of interest to the pupils were added by them.	Twenty-seven titles representing 16 authors were ranked highest and 33 titles reptesenting 28 authors concluded : "It is our business as teacher to study the lines of normal growth and to lead our pupils naturally from one interest to the next higher...
Reading	King, Cora E.	"Favorite Poems for Children of Elementary School Age." "Teachers College Record," 23 : 255–273, May, 1922.	To find the poems in which the elementary school pupils were most interested.	Four thousand eight hundred children in ten cities were asked to select two poems they liked the very best.	A list of 100 poems is given that were mentioned ten times or more. A table showing children's reasons for their selection suggests fields of interest.
Reading	Elckert, Molly H.	"Children's Choices of Poems," "Elementary English Review," 5 :	To determine whether children in grades 1 to 3 enjoy reading or	Selection was made of three groups of poems each group being composed of four poems	Approximately 80 per cent of the non-textbook poems had a rating of first choice.

		June, 1928.	learning to read poems in textbooks.	from a textbook and one from another source. These were read to the children who stated their preferences.	
Reading	Lancaster, T.J.	"A Study of the Voluntary Reading of Pupils in Grades Four to Eight," "Elementary School Journal," 28 ; 525-37, March, 1928.	To determine the reoding interest of pupils In grades 4 to 8, inclusive.	The pupils in six city schools in Illinois filled out a questionnaire listing books read and their interest in them. Books were listed according to frequency in order to determine the type of material to include in children's books.	Ninety-eight per cent of the books read were prose. They were usually fiction. Children's tastes in literature may be satisfied by reputable books by reputable authors.
Reading	Elder, V Carpenter, H.S.	"Reading Interests of High-School Children." "Journal of Educational Research" 19 : 276-82, April, 1929.	To determine the out-of-school reading of senior high-school girls.	Questionnaire addressed to 487 senior high-school girls.	Fiction was more generally read and better liked than any other type of literature Quality of materials improve term to term. Physical make-up of book is not a factor in choice.

+Certain studies are included in the table because of their historic interest.

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*
Reading	Jennings, Joe	"Leisure Rcgding of Junior High School Boys and Girls," "Peabody Journal of Education," 6 : 333-348, May, 1929.	To determine the leisure reading of junior high-school boys and girls.	Pupils were asked to record for one week their reading not related to school work.	Practically all pupils read newpapers. A very large number of magazines were read. A total of 1084-books were read. Continued stories were read by 106 pupils. A wide variety and high quality of reading is shown.
Reading	Gates Arthur I.	"Interest and Ability in Reading." Macmillan Co., New York, 1930, Chapter II.	To determine general characteristics of reading materials of interest to primory children.	Thirty selections were made of children's literature by experts. The criteria used in making the selection were famillar family experience, unusual experience humor, fancy, information, and heroism.	The frequency given the literary selections was as follows : humor, fancy, heroism,familiar experience, unusual experience, and information.

Reading	Beinhart, Frieda	"My Leisure Time." "Training School Bulletin," 27 : 161-66, February. 1931.	To discover the type of stories and poems interesting to pupils of low intellectual capacity.	Each pupil was questioned individually concerning his favorite poem and story and a record was kept of his answers.	The stories and poems in which these pupils were interested were decidedly lower in literary merit than the stories and poems in which normal pupils are interested.
Reading	Dowell, Pattie S, and Garrison, K. C.	"A Study of Reading Interests of Third Grade Subjects," "Peabody Journal of Education," 8 : 202-6, January, 1931.	To determine children's interest in reading content.	One hundred nine pupils from the third grade in Raleigh, N.C., were given a questionaire by which to record their choice of reading materials. The choices of the pupils were analyzed to determine the elements of the selections preferred.	The results of the questionnaire revealed the most interesting elements to be kindness, bravery, happiness, beauty, humor, animals story quality, achievement, love, Biblestories, and wisdom.
Reading	Gates, A. I., Peardon, Celeste C., and Sartorius, Ina C,	"Studies of Children's Interests in Reading," "Elementary School Journal," 31 : 656-70, May, 1931.	To determine the interest of children in informative and narrative reading materials.	Selections of narrative and informative literature were made by competent teachers and specialists. Records were kept of the children's choices.	The percentage of choices for narrative selections was 72.3 per cent and the percentage favoring informative selections was 23.7.

(*Contd.*)

1	2	2	4	5	6
Reading	Cain, Wm. R., and Brown, Francis J.	"An Evaluation of the Outside Reading Interests of a Group of Senior High School Pupils," "Journal Sociology," 5 : 437-442, March, 1932.	To evaluate the outside reading interests of adolescent children.	The sophomore and senior groups a high school in northern New Jersey were asked to list the books read during the summer and the first three months of school, exclusive of school assignments.	Findings showed that more than half the books read by seniors had some literary merit. The percentage of harmful books was very small. Those having no special merit were mystery, detective, murder, and high love stories,
General Science	Finley, Chas.	"Some Studies of children's Interests in Science Materials" School Science and Mathematics," 21 : 1-24 Jan. 1921.	To accure data on children's interest in animals.	A "water dog" was exhibited to 1716 pupils in grades 1-8. For three minutes the children were permitted to ask questions orally, after which written questions were collected. The written questions were tabulated	The phases in the compositions compared closely with the questions asked, There was considerable change in the emphasis of phases according to the age and grade of the Pupils. For example, interest in life history and adaptation to environment increased from grade to grade.

				and classified. After 40 days a composition was written about the animal and the elements mentioned in the composition were compared to the questions that had been asked.	
General Science	Palmer, E.I.	"How to Meet Some of Children's Nature Interest," "The Nature Study Review," 18 : 23-30, Jan. Feb. 1922.	To determine the nature interests of rural children as revealed by their questions.	Teachers were asked to send to the investigator the nature study questions which had been asked by their pupils. The first 500 received were analyzed.	Questions of a zoological nature were first of importance according to the percentage of all questions asked Biology botany, ecology, were next in importance.
General	Burtis,	"Some Values Derived from Extensive Reading of General Science," "Controbution to	One place of the study was to determine the scientific interests of children.	A questionnaire was addressed to pupil asking them to list five topics in science about which they would like to know. A total of	Both boys and girls were much more interested in the physical sciences than in the biological sciences. Boys were more interested in technical processes than girls. There is

(Contd.)

1	2	3	4	5	6
		Education No. 163, Teachers College, 1924, pp. 27-40.		3,330 were returned.	a shift from the physical to the biological sciences as maturity is reached.
General Science	Pollock, C.A.	"Children's Interests as s Basis of What to Teach in General Science," "Educational Research Bulletin," 3 : 3-6, Jan. 9, 1934.	To determine the interest of children in general science topics.	A questionnaire was addressed to pupils asking them to list topics of scientific interest.	Topics with a frequency of mention exceeding 100 are electricity, stars, radio, heat lightning, Planets, and the moon. Much more haemphasis is given physical science t han biological science.
General Science	Downing, E.R.	"Children's Interests in Nature Materials" "Third Yearbook. Department of Superintendence of the National Educa-	To determine whether children are more interested in animal, plant, or physical materials and in what phases they	An analysis was made of questions written voluntarily by 742 children to a magazine inviting them to ask any questions they would like to	Sixty-one per cent of the questions concerned animals, 20.6 per cent plants, and 1.8 per cent miscellaneous materials. Most of the animal questions concerned wild animals.

		tion Association, p, 299, 1925.	they are most interested.	have answered.	
General Science	Traiton, G.H.	"Children's Interests in Nature Materials," 'Third Yearbook, Department of Superintendence, National Education Association, 1925, pp. 299-300.	To test children's knowledge of animals and plants to find what natural interest they have in nature.	Approximately 1000 children in grades 4-7 answered questions about birds, plants, and animals, such as, which animal do you like best ?	The average number of animals named was 18 : trees, 10 : and flowers, 9. In adapting subject matter of nature study to children the interest the children must be approached through the life activities of animals, plants, and birds.
General Science	Peters, Chas, C., and Himes, H.E.	"What Biology Functions Most Largely in Giving Pleasures of Recognition ?" "Second Yearbook, National Society for Study of Educational Sociology, 1929, pp. 118-128.	To determine an index of relative utility for each item in biology according to the pleasure received by the pupil in studying it,	An analysis of 90 questionnaires received from pupils who had studied biology earlier in their high school course was made. The measure of value of each phase of biology studied was determined according to pleasure indicated by the questionnaires.	Means of locomotion, economic importance, external structure, reproduction. were rated highly.

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*
General Science	Nulton, Lucy	"Science Interests and Questions of a Second Grade," 'Peabody Journal of Education,' 7 : 224-30, January,	To record the various science interests of a second grade over a nine-months' term.	The questions relating to science that developed naturally during a nine-months period were recorded by the teacher.	The range and variety were wide. Many questions pertained to the earth, mogin, moss, insects, flowers, plants, milk, fish, deserts, shells, paper, and printing.
General Science	Nettels, Chas, H.	"Science Interests of Junior High School Pupils," "Science Education,' 15 ; 219-226, May, 1931.	To determine the interests of pupil of the junior high school in science.	A questioanaire was addressed to seventh eighth, and ninth grads pupils asking them to list five topics they would like to have discussed in their science course.	From 1,067 papers returned, 178 different scientific interests were found. Differences in sex, and the mental ability of the pupils, were shown.
Social Studies	Kyte, Geo, C.	"Experimentation in the Development of a Book to Meet Educational Needs,"	To determine the content for a book to be used by the fourth grade in the social studies.	Selections were made of social science materials by the author. They were mimeographed and given	Accounts telling about railroads, boats, the things people do, etc,, were of most interest. Generalizations of all types were aversions.

		"Educational Administration and Supervision," 14 : 86-100, February, 1928.		to the children, who recorded their reactions to them.	
Vocational Occupations	Sheldon, Donald R.	"Children's Interests," "Elementary School Journal," 33 : 205-14, November, 1932.	To determine the likes and dislikes of children in certain occupational and recreational choices.	A five-point scale was devised for the rating of various occupational and recreational choices. The results of ratings of the topics were studied and ranked according to frequency.	Aviator, mechanic, and engineer were highest choices among the boys : teacher, actress, and nurse were highest among the boys ; teacher, actress, and nurse were highest among the girls.

General studies of child interest and use are object to severe limitations. Interest and use cannot be dissociated from individuals and retain a great deal of meaning. Children under one set of environmental conditions may be interested in one type of thing and children under other conditions in something totally different. Likewise, children under varying conditions will use widely different. For example, there may well be a considerable margin of words used in spelling by children in an industrial area which differ significantly from those used by children in a mountainous rural area. When the individual and his environmental surroundings are removed from consideration and averages are taken, much of the value of interest and child use disappears. That is, interest and use are of greatest significance to the teacher is actuallyorganizing instruction for a given group of children. There they are of primary importance.

But even with these limitations, there are certain general findings of such studies that are of value to the curriculum worker in selecting potential subject matter. It has been shown, for example, that there is a tendency for children to like reading materials which possess certain general qualities and to dislike materials which have other general qualities. Findings of this type provide a basis for selecting potential subject matter which simplifies the task of the teacher in dealing with a particular group of children.

That is, if the curriculum worker suggests only potential subject matter that has been found interesting and useful to some children at the general area of development of the children for which the curriculum is planned the teacher will have a much easier task selecting from these suggestions what is suitable for a given group than would be the case if the curriculm worker did not make the check against general interest and use.

One type of study, frequently used, is not included under any of the forgoing bases. This type is concerned with analyses of the material treated in textbooks and courses of study.

Omission under the foregoing bases is caused by the fact that the basis of selecting content cannot be determined with accuracy in the case of such studies. This will be seen from a consideration of the procedure employed. If a course is to be prepared in a given subject, American history for example, a study is made of the topics treated in a representative group of American history textbooks or courses of study. Those topics which have high frequency are then selected for inclusion in the course under preparation.

Inasmuch as the writers of different texts or the committees that prepare different courses of study may use entirely different base of selecting the materials they include, analyses of texts and courses of study merely indicate the materials that are most generally considered worthy of inclusion without regard to basis of selection. The traditional practice, for example, of a particular school or the opinion of a single person is accorded equal weight by this procedure with the results of careful reflection, extended analyses, and experimentation. Items of low frequency may really have a far sounder basis for being included in a course than those with a high frequency. Even so, this procedure is of value to those who wish to pursue a middle-of-the-road course. It makes it possible to be neither the first to adopt the new nor the last to discard the old.

Studies are occasionally made which combine two or more of the bases for selecting subject matter. Robertson's study of content in science is a recent one of this type. He deflnes a basis for selecting content in terms of scientific principles, subject matter topics, and children's interests. A collection of scientific principles was made and submitted to a jury of three science teachers. The resulting list was refined and submitted to a group of subject matter specialists. A list of 243 principles resulted. A list of subject matter topics was prepared in much the same way. Children's interests were checked by reference to questions asked. These principles, topics, and interests may be employed as a basis for checking the potential value of content. Thus, significance to the subject field and children's interests are used as a basis of selection of subject matter in this case.

The practical curriculum worker will find it unwise to employ exclusively any single basis for selecting potential subject matter. Fundamentally, a question of values is involved. Given an opportunity to have A or B, but not both, which shall I take? More especifically, which phase of the race heritage, A or B, promises to be of greatest worth to the child? Since this choice of values is the root of the problem, the answer must be approached from the philosophical point of view.

But this does not mean that the evidence from quantitative studies should be ignored. Such evidence is in fact a vital means of clarifying the respective values and characteristics of A and B. Consequently, we may be wholly consistent in applying all four of the bases of selection. Although inadequate when taken separately, they provide a valuable check when all are employed. For example, although the significance of a given phase of subject matter to the organized field of knowledge of which it is a part is by no means an adequate basis in and of itself for selecting potential subject matter, yet if subject matter does have such significance assarance is increased as to its general importance and value.

Similarly, the significance of subject matter to contemporary life is a worthwhile criterion of value. Although adult use may not advisedly be employed as the sole determinant of the content that is included in the curriculum, yet it does add assurance that the material selected is significant. Thet fact that adults use some particular items of subject matter may be just as strong an indication that they should not be used by children as that they should be used. Yet studies of adult usage provide valuable data for determining what is socially significant. Consequently, when quantitative studies of adult use are employed in conjunction with the philosophical estimate of the social significance of the material, this basis makes a real contribution to the selection of subject matter. Likewise, general indications of the type of material in which children are interested and the type of material that they use provide a suggestive list of content of much greater value to the teacher as he actually begins the organization of instruction with children than otherwise would bo available.

Our conclusion, therefore, is that no single basis of selecting potential subject matter is adequate in practical programs of curriculum development. Rather, attention may be given to each basis. Assurance of the value of the proposed material will be increased as it is seen to be :

1. significant to the organized field of knowledge,
2. significant to contemporary life,
3. commonly used by adults, and
4. of general interest to children.

PLACE OF SUBJECT ORGANIZATION

It has already been pointed out in Chapter 3 that the logical arrangement of subject matter is the traditional method of organization. Ever since man became concerned with learning as such he has tended to organize knowledge in terms of relationships inherent between the facts and principles involved. Down through the centuries this organization has been elaborated. Steps lacking for the complete development of the organization have been filled in from time to time and are being continuously elaborated.

Frequently new discoveries have invalidated the logic of certain organizations and have required complete reorganization. Also as knowlege has increased, new divisions and organizations of subject matter have developed. The result is an ever-increasing array of logically organized areas of knowledge, each area or subject possessing increased complexity. Consequently, whereas the seven liberal arts were consedered an adequate classification and organization of knowledge for many centuries, we now have a great multiplicity of subjects and divisions of subjects. As knowledge increases, this complexity of subject organization must of necessity continue to increase.

Referene has been made to the malefic influence of the logical arrangement of subject matter on instructional organization. That this is the case is agreed to by many careful students of the instructional program. Whitehead, for example in discussing shortcomings of the educational program states :

> The solution which I am urging, is to eradicate the fatal disconnection of subjects which kills the vitality of our modern curriculum. There is only one subject-matter for education, and that is Life in all its manifestations. Instead of this single unity, we offer children—algebra, from which nothing follows ; geometry, from which nothing follows ; science, from which nothin follows ; history, from which nothing follows; a couple of languages, never mastered ; and lastly, most dreary of all literature, represented by plays Shakespeare, with philological notes and short analyses of plot and character to be in substance committed to memory. Can such a list be said to represent. Life, as it is known in the midst of the living of it ? The best that can be said of it is, that it is a rapid table of contents with a deity might run over in his mind while he was thinking of creating a world, and had not yet determined how to put it together.

James Harvey Robinson writes on the same point :

> At present vital knowledge is broken up into fragments ? shuffled into large piles labelled history, philosophy, psychology, philology, anthropology, ethics, politics, economics, astronomy, physics, chemistry, biology, geology, geography, botany . . .
>
> These departments of knowledge, great and small, correspond to a necessary division of labour, and have, of course, a great significance in *research*, but they form one of the most effective barriers to the cultivation of a

really scientific frame of mind in the young and the large.

Dewey ascribes much of our present educational confusion to our too strict adherence to the logical organization of subject matter. "In a situation", he says, "where the skills or arts and the subject matter of knowledge have become interwoven and interdependent, adherence to the policy forming the studies of secondary and collegiate instruction on the basis of many isolated and independent subjects is bound to result in precisely the kind of confusion we have at present".

We should not conclude, however, from criticisms of the undesirable ways in which logically organized subject matter has been employed that this organization has no place in an instructional program. This is not the case. Although the logical organization of subject mater has been employed in curriculum making and instructional organization so as to have many bad results, it does, nevertheless, hold an indispensable place in the educative process. The question which the curriculum worker needs to consider is not whether logically organized subject matter has a function or place in education, but rather what that function or place should be.

The logical organization of subject matter is primarily significant to education by reason of two services it renders. First in importance, perhaps, is its relationship to the advancement of knowledge and the discovery of truth. It is in fact an indispensable basis upon which workers who strive to achieve these ends must build. Areas in which knowledge is lacking or is of doubtful accuracy are revealed by this organization. A basis is also provided for checking the reliability and implications of new findings. Suggestions are available as well for methods of discovering truth.

In the second place, the logical organization of subject matter is significant in that it serves to systematize and arrange the race's knowledge somewhat as a cataloguing system serves to arrange and systematize the books in a library. Rarely would we want to study or use the books in the order in which they are arranged on the library shelves ; yet having them arranged in a definite order and knowing the general plan of arrangement aids in getting the book we need with least delay. Knowledge of the arrangement of subject matter aids in the same way by further effective use.

Thus, the person who knows the chronological and causal relationships of certain events and facts in history will be able to use those events and facts with greater effectiveness in dealing with specific problems and issues than one who does not understand these relationships.

A difficult issue arises for the curriculum worker when consideration is given to the provision that should be made in the educational program for establishing these logical relationships. In the past, it has been assumed that establishing these relationships is the primary purpose of education, and that this purpose should be achieved by direct and intensive study of the materials as logically organized. Work has been organized from the intermediate grades on through the educational program in this way. This practice is now severely criticized. In dealing with the issue thus raised, we will consider first the training required for the specialist who will advance the frontiers of knowledge.

Recognizing the need such a specialist has for thorough mastery of the logical relationships in the field in which he is working, when should direct training start for such mastery ? What provision should be made previous to such training for experience in dealing with logically organized subjects so that wise selection of fields of specialization may be made ? Of primary importance in dealing with the first of these questions are the characteristics of the individual at various stages of intellectual growth.

It is generally recognized that there are certain stages of mental growth just as there are of physical growth, and that certain stages of development are essential for achieving certain types of understanding and behavior. Stage of growth or degree of development is in fact probably the most important factor in accomplishing undertakings of practically all kinds. Little can be done in the way of direct training to develop particular abilities before the stage of development essential for their mastery is reached. For example, permature attempts to train babies to walk or climb have little influence on the time at which they become able to engage in these activities. Likewise, attempts to train children in reading techniques before they attain a mental age of at least six years does little to lower the age at which they can read successfully.

In fact such training may leave no increment when the child has been reading for a time, and the effects of the training may be detrimental. It is somewhat like feeding a baby solid foods before his organism is ready for them. There is similarly a stage of development at which the individual is ready for intellectual specialization. To use methods of specialization before that time is a waste of effort just as in the case of the foregoing illustrations. The part that logically organized subject matter should play in preparing the specialist who will advance the frontiers of knowledge must be determined first of all by discovering the stage of growth at which the individual is ready to engage in specializing activities.

Dewey points out in this regard that there are three discernible stage of mental development.

> In its first estate, knowledge exists as the content of intelligent ability—power to do. This kind of subject mater, or known material, is expressed in familiarity or acquaintance with things. Then this material gradually is surcharged and deepened through communicated knowledge or information. Finally, it is enlarged and worked over into rationally or logically organized material —that of the one who, relatively speaking, is expert in the subject.

The latter stage mentioned is the one at which intellectual specialization is undertaken. At just what period of life this development is attained differs, of course, greatly among individuals. Little has been done experimentally to determine what ages represent most accurately various stages of intellectual growth. Opinion seems to agree generally, however, that individuals are not ready for specialization, especially in highly intellectual areas, before late adolescence. In line with this opinion there is a general movement in practice to designate the major responsibility of the secondary school through the first two years of college as that of providing general education. Training of specialists in the several fields of knowledge as well as in the professions is assigned as a special function of the university which is composed of the senior college and graduate school. This division of function is well illustrated by the report of the Carnegie Foundation on State Higher Eduation in California. Whatever else may be said of this report, it represents what is probably the most concise and clear-cut statement available on the function of various phases of the educational system.

> It is the primary and fundanental function of the common school system extending from the earliest years of schooling, through kindergarten, elementary school junior and senior high school, and the junior college, to educate the citizen for effective participation in all those common understandings and co-operations which are necessary to sustain the best in our complex contemporaneous civilization which is American . . .
>
> It is the main function of the university system, which includes the upper divisions of colleges, the graduate schools and the professional schools, to educate specialists for the strategically important social services which modern civilization requires, and to do this with full regard to the number of such specialists that society can utilize.

In elaborating the function of the common school system the report has the following to say about the secondary school program in which the logical arrangement of subjects has been especially dominant.

> Much of the current criticism of the behavior of citizens as the produce of schools is based on the fact that the common schools, above the elementary school are not really utilized by the student nor fully managed by teachers and administrators for this fundamental civilizing purpose. When this ideal is realized, subject boundaries will be less sharply defined. New and more practical groupings of materials will be devised, and the process of learning will be recognized, much as is now being done in comprehensive courses at some 160 institutions in the United States. Problems will become more important than topics, libraries than textbooks . . .
>
> The reconstruction of secondary education . . . will involve several marked change from the traditional outlook and method.
>
> In the first place, secondary education will be not less intellectual but more social and adaptive. It will be directed toward giving the student and understanding of the natural and social world in which he lives. The mastery of the academic letters, arts, and sciences will be no longer the end of his school mastery, but the educational means of understanding life. Whatever over other resources of experience lie outside of the traditional disciplines, such as industrial arts and fine arts, will be utilized with full scholastic respectability as valued aids in realizing the new and broader conception of the human and social purpose of the common schools.
>
> In the second place, secondary education will focus its attention more steadily on contemporaneous life, with its oncoming problems. The lag between what the school teacher and what present and impending citizenship requires will be decreased. Scholarship, once chiefly related to the past, will now be related to the present,

> with study of the past will highly valued to the extent that the contributions of the past invitably persist in the present.
>
> Thirdly, schooling will not be thought of as practically the end of education or learning, now to commonly and so fatally the case. Education will be regarded as a continuous process, coterminous with life, to which schools merely give impetus for further and continuous personal inquiry and growth. An education at school will be regarded as preparatory to continuous adult learning. How much academic ground is covered in the school building under a licensed or accredited teacher, will no longer be so important as it has been. What one learns anywhere in life, and the degre to which one has the impulse and power to continue to learn and think accurately will be far more important to all concerned—to the world, to the university, and, most of all, to the student himself.

The position on specialization stated in this report appears to be gaining ground rapidly in professional schools and university departments. The qualifications asked of students entering this phase of training are, to an increasing degree, breadth of background, good work habits, and desirable attitudes. There is relatively little concern as to the proficiency which the entering student may have gained in lower schools in his chosen field of specialization. Thus, specialization, according to leading thought, may appropriately make few specific demands for mastery of prescribed logically organized fields below the senior college level.

However, there still remains the question as to what provision should be made previous to specialization for experience in dealing with logically organized fields so that wise choice of a field of specialization may be made. It must be recognized that growth processes are gradual. The boy or girl does not suddenly gain insight upon entering senior college adequate to assure wise choice of a field of specialization. The student needs to know rather definitely what he is undertaking. He should have rasonable assurance that his abilities and interests will find opportunity for expression and growth in the field of specialization chosen. Thus the common school does have the responsibility, in addition to providing a general a education, of making it possible for the individual to develop specialized interests and to become well acquainted with the demands in various fields of specialization. If this is done, the individual will have a real foundation for entering a chosen field of specialization. If it is not done, selection is largely the result of chance.

This development of interest and of adequate understanding to enable wise choice of a field of specialization probably proceeds through a gradual process of differentiation. That is, the child's interests, being at first extremely general and highly utilitarian, tend gradually to become more specialized and intellectual. Out of these general situations comes some particular element which attracts the child's attention. This may then become a point for study in and of itself. If encouraged, the individual may expand these special interests over a period of years, and ultimately chose his field of specialization on the basis of the experience thus gained.

The common school should so plan its program as to lay this foundation for wise entrance into specialization. This means that opportunity must be provided for pupils to follow and develop special interests of all types. It is not knwon specifically at what age such special interests are developed with sufficient intensity to be employed in a major way in shaping the educational program, but general opinion and practice suggest that it is during early adolescence. It may reasonably be expected then that some differentiation in curriculum should start in the junior high school. From this point on through the period of general education probably the opportunity to work on special interest should be gradually increased. On the junior college level the individual may select fields of concentration within which to work. In following out and developing special interests in this way the individual will frequently engage in undertakings that involve segments of logically organized subject matter. By so doing he gains a good idea of the demands the various fields make for specialization.

To summarize the point of view, the period of general education should include in its program opportunity for developing and following special interests. This may lead in the closing years of general education to selection of fields of concentration in which a major portion of the student's energies are spent. Such opportunities during the period of general education provide a basis for making a wise choice in specialization.

Now let us consider the relationship of study of logically organized subjects in the elementary and secondary school to effective use of the race heritage. We have already stressed the importance of gaining some understanding of the logical arrangement of subject matter in order to use it most effectively. How shall this be done in such a way as to accomplish the purposes of general education? In instruction of the better type developed primarily around logically organized subject matter, segments of logically arranged content are studied and then possible applications of these materials in life situations are sought. For example, in history the facts about a certain period are learned and then the significance of these facts for contemporary life is sought. In geography, generalizations and facts about various areas of the earth are memorized and then, when possible, relationships to things the child knows and considers important are pointed out. In arithmetic processes are taught and then the types of situations in which these processes may be used are illustrated.

For effective general education there must be a shift in emphasis in this procedure. Subject matter must first be used, it must have significance for the learner. Then its internal relationships and logic of organization may be considered intelligently. In this case the learner's end or purpose to be realized is the primary point of orientation. Logical organization is secondary and is looked upon as a tool or means of achieving more effective use in the future. This does not mean, however, that the secondary orientation is unimportant or is to be slighted. It means simply that concepts of the organized fields of knowledge grow gradually in the mind of the student as he develops understanding of life and the world about him, and sees that logical organization of knowledge aids in understanding the factors with which he must deal. He generalizes before he states the generalization in formal terms. He knows before he defines.

When the facts and principles included in a logically organized subject have such a background of meaning and use, direct emphasis in the form of instruction and drill may appropriately be given to their mastery and to developing an understanding of the logical relationships involved.

Gaps in the logical relationship may also be filled in by direct emphasis if the child's experience permits deduction of the intervening steps in meaningful terms to him. As the child approaches maturity the opportunity to do this increases. For example, the child from the first grade engages in experiences the involve facts and interpretations of historical significance. At first these facts have only limited meaning in terms of immediate situations. But as the child's experience broadens he becomes able to see more abstract relstionships. For example, he commences to develop a concept of time relationships. As he proceeds from one undertaking to another the wise teacher wtll point out and emphasize time relationships. How is this event we are dealing with today related to the one we considered yesterday or last weekk? Did this occur before or after the undertaking we found out about in our work at the beginning of the year? Gradually the concept of relationship in time grows. And as it grows it is changed with meaning and significance.

It is not mere memory, Eventually the child himself will come to appreciate the significance of this relationship in time to such an extent that he will engage directly in the enterprise of broadening his grasp of this relationship with understanding and of filling in gaps which he has not fully mastered.

Thus, we have before us the possibility of organizing instruction so that the first and primary point of orientation is the end to be achieved or the purpose of the learner. Subject matter is selected first of all from this point of reference. A second point of orientation is the logical relationship that exists between the facts, information, principles, and formulas used, and those used previously. Development of an understanding of these relationships increases the significance of the material for the situation at hand. As situation is added to situation and more and more logical relationships established as a background, the material which is used by the individual in dealing with subsequent situations becomes increasingly significant.

ASSISTANCE IN SELECTING SUBJECT MATTER PROVIDED IN CURRICULUM DEVELOPMENT

We have already seen how studies of adult use and child interest and use contribute to the wise selection of subject matter. Attention is now turned to certain more general ways in which curriculum development influences the selection of subject matter. Consideration of these more general influences requires emphasis again on the point that what does or does not become the actual subject matter of the pupils is determined by specific learning situations. Teachers cannot make pupils master certain subject matter. They can only guide them in situations that require subject matter and help them to select and use subject matter wisely. The function of curriculum making is to place the teacher in the best possible position to give such guidance.

This desired end may be achieved by making available to the teacher a wide selection of carefully chosen potential subject matter. To illustrate the point, we may assume that a given individual decides to undertake exploration of certain Antarctic areas. He has the assistance in planning his expedition of one who has had some experience in such exploration and who has studied the matter extensively. The assistant may suggest a great variety of materials and equipment that should be taken.

But this list will not be followed in all details. Discoveries in science and improved means of transportation and communication will modify the equipment chosen. The particular purpose of the expedition will exert a similar influence. Consequently, the person engaged in the undertaking will make a selection from the suggestions of the one who has had previous experience in such exploration in terms of the newly developed materials and the specific outcome he has in mind. A further selection is made as the expedition gets under way. Unexpected conditions and events make some materials useless and make desirable other materials not originally chosen. In other words, the developing course of action, being different from that experienced in previous expeditions, causes variation in the materials used and the extent of their use.

The curriculum worker can take the preliminary step in selecting subject matter. He can canvass available subject matter for educational ventures in certain areas as defined by the scope of the curriculum. He can see that the most valuable and worth while materials, in terms of past experience, are included in the suggestive list. He can see that the list is carefully selected in terms of the area to be dealt with. He can see that it is reasonably inclusive. He can suggest possible relationships to child purposes and outline the logical relationsships that will most probably be involved. But this is as far as he can go. He cannot make the actual selection for the child any more than the one aiding the would-be explorer can determine previous to the exploration just what will be used.

These suggestions of potential subject matter may be in terms of pertinent generalizations, principles, laws, facts, events, formulas, and techniques; or in the form of objective materials, such as maps, charts, graphs, or construction materials. The more complete and carefully selected such suggestive lists are, the greater the possibility that appropriate subject matter will be found for given groups of children. Magazines, newspapers, pamphlets, bulletins, specimens, environmental materials, and similar items should find a large place in such suggestions. Much free material of real value is available for teacher and pupil use.

This procedure of suggesting a great variety of potential subject matter is contrary to much practice in which a very limited amount is suggested, but in which that little is prescribed. Such a procedure encourages. in fact almost requires, mere memorization. It looks on the acquisition of facts and skills as the end of education rather than the development of dispositions, attitudes, and methods of work. It overlooks, in brief the essential relationshp of raee experience to the education of the individual. In contrast we hold that the school should provide extended and varied opportunities for the individual to make wide and discriminating selection of materials from the race experience that will help him achieve the worthy purposes for which he strives.

10

The Objectives of Modern Secondary Education

The selection of subject matter was treated in the foregoing chapter as a general problem. Consideration is given in this chapter to the closely related problems of determining suitable grade placement and time allotment for various items of subject matter. These problems have received a great deal of consideration both from general curriculum committees and research workers. Courses of study present the work of curriculum committees and studies of widely varied types present pertinent research findings.

The chapter is organized in four main divisions. First, consideration is given to sources from which recommendations and standards for grade placement and time allotment are currently derived. Second, the bases upon which various recommendations and standards rest are treated. Third, certain factors of great importance in grade placement and time allotment, which are frequently overlooked, are discussed. Fourth, suggestions are made for dealing with grade placement and time allotment in practical programs of curriculum making. Before turhing to consideration of the first of these two preliminary points will be briefly discussed.

GRADE ORGANIZATION BASIC TO THE PROBLEM

Organization of our school system into grades is basic to the problems, as currently attacked, of placement of content and time allotment. In the early history of elementary education in America children of all ages were taught together in one room. As attendance increased, additional rooms were provided but heterogeneous grouping was continued. The division of pupils among teachers was generally by sebjects. Gradually, however, as numbers increased the school came to be divided into primary and grammar divisons.

In some cases the terms higher and lower schools were used. Organization of the school into primary and grammar divisions was followed in turn by organization into classes. The master or teacher had the assistance of "ushers" who heard the various classes recite in small recitation rooms off the main room. Out of this practice grew grade organization with individual classrooms.

Each group of students entering during a year formed a grade. There was consequently a grade for each year of attendance. Soon the idea developed that each year of school or each grade should represent a certain amount or level of achievement and steps were taken to define grade standards. The standards in turn became the chief determinants in regulating the progress of pupils, the subject matter which they studied, and the amount of time devoted to various types of undertakings.

Consequently, the problems of grade placement and time allotment in the present school organization relate to the placement of content on grade levels and to the allocation of specified periods of time the various items of content.

RELATION TO METHOD OF DEFINING SCOPE OF THE CURRICULUM

The first step in grade placement and time allotment is taken when the scope of the curriculum is defined. The method employed to define scope determines the terms in which grade placement and time allotment may be made, and very largely conditions the flexibility or rigidity, and the generality or minuteness of placement and time allotment.

For example, if the textbook method of defining scope is employed, it becomes necessary automatically to define grade placement and time allotment quite rigidly in terms to text materials to be covered. The center of interest procedure, on the other hand, places hardly any restrictions on the materials that may be treated and the time to be alloted to various phases of work. The basis employed in a given program for defining grade placement and time allotment should be consistent with the particular method used to define the scope of the curriculum.

As the sources of recommendations and standards for grade placement and time allotment and their bases are discussed it should become clear which may be employed consistently with various methods of defining the scope of the curriculum.

SOURCES OF RECOMMENDATIONS AND STANDARDS

There are four available sources of recommendations and standards for grade placement and time allotment. They are as follows:

1. Current practice.
2. Judgment of specialists,
3. Experimentation, and
4. Practices in experimental schools.

These sources are not mutually exclusive as to the particular basis upon which the recommendations or standards rest. Difficulty of content may be the basis of recommendations from any one of the sources. The difference is that in one case the findings on difficulty may represent experimentation; in another, they may represent what specialists believe to be the order of difficulty; in another, what practitoners generally think about the matter; and in another, what experimental school practice may show.

It is sometimes difficult to tell what the basis is in a particular case. The recommendations and standards derived from one source also influence those presented by other sources. For example, current practice has no doubt been influenced by the judgment of specialists, while the judgment of specialists has in turn been influenced by current practice. Consequently, certain relationship will be noted between the sources as the discussion proceeds.

CURRENT PRACTICE

Current practice is the most widely employed source of standards for both grade placement and time allotment. In grade placement this basis is used in determining what subjects should be taught in particular grades; how topics within subjects should be divided between grades; and what specific materials, such as poems, stories, and plays, should be assigned to the respective grades. Current practice may be determine by analysis of course of study, of programs of study, and of textbooks. A number of such analyses to facilitate the development of standards have been made. Certain representative ones have been selected for illustration.

Kyte made an extensive study of practice in placing the subject matter of history in the elementary grades. Fifty-three courses of study, none of which were more than seven years old and all of which were in use in the public schools, were used in collecting the data.

He found in regard to the grade organization of subject matter that twenty-two courses of study make no provision for history in the first two grades, that sixteen of the twenty-two courses omit it in the third grade, that eleven of the sixteen omit it in the fourth grade, and that four of the eleven omit it in all grades below the seventh.

He found also that six broad topics are given for the second grade in the thirty-one courses of 'study which outlined work for that grade. The number to topics increases to twenty in the fifth grade and decreases to seventeen in the sixth grade. In the second grade, community and primitive life is listed in ten courses of study and primitive life is listed in eight additional courses.

In the third grade, primitive life, citry, county, and community life, local history and pioneer life are listed in twenty of the thirty-seven courses of study offering history in this grade. There is considerable agreement on subject matter in twenty courses, although there is general disagreement as to the terms used to describe it. In regard to the repetition of the various topics of American history it was found that three of the courses of study omit topics that are covered four times by three other courses. The number of courses that repeat the materials of American history two times range from twenty-two to thirty-four, while the range is from one to nine that repeat materials three times. The range of dates indicated by the courses shows that some of the pupils in the seventh year cover 2700 years of history while other pupils cover only seventy years. Even more extreme differences were noted in other grades.

The author concludes that "we find comparatively little guidance regarding the grade-placement of subject matter," and "when we compare the recommendations emanating from the deliberations of the various committees we are forced to conclude that the proposals of any one committee constitute guesses which may or may not be any better than those of any other committee.

The Superintendents' and Principals' Association of Northern Illinois appointed a Committee of Seven to make an investigation to determine when to teach the topics of arithmetic. This committee, as a preliminary step, gathered data as to the grades in which different topics are now being taught. In doing this they analyzed current practice in 125 Middle West school systems.

A study of the data reveals that there are wide differences among the schools as to the time topics are introduced and almost as great variation in the time indicated for completion of instruction on the topics. For example, addition facts are introduced in the first grade in seventy schools, in the second grade in fifty-two schools, and in the thrid grade in three schools.

It is indicated that instruction on this topic should be completed in the second grade in thirty-six schools, in the third grade in forty-seven schools, in the fourth grade in twenty-four schools, in the fifth grade in four schools, in the sixth grade in are school, and in the seventh and eighth grades in two schools each. Subtraction facts have about the same distribution. Multiplication is introduced from the first to the fourth grade and is to be completed from the third to the eighth grade.

A study of grade placement of topics in oral English was made by Pribble. He analyzed five series of language books to determine in which grades certain forms are introduced for drill. The number of points of usage on which the books provide drill in the third grade range form eleven to twenty-seven.

There is agreement of all the books on just two items; namely, "saw" and the elimination of "ain't." Four of the five agree on the use of "came" and the proper distinction between "is" and "are," while three agree on six other items. In the fourth grade there is even less agreement and in the fifth grade is agreement on only one point. The distribution indicated in Table 1 shows the grade in which the five series of language textbooks first introduce certain forms for drill. From these data it will be seen that there is very little agreement among the series of language textbooks concerning the introduction of drill in language forms.

Table 1

Grade Placement of Topics in Oral English

Form	*Number of Series Which Introduce Forms in Third Grade*	*Number of Series Which Introduce Forms in Fourth Grade*	*Number of Series Which Introduce Forms in Fifth Grade*	*Number of Series Which Introduce Forms in Sixth Grade*	*Number of Series Which Do not provide for Drill on Form*
ate	2	1	1	0	1
sit	1	2	1	1	0
lie	0	2	2	1	0
ran, run	2	1	1	0	1
broken	1	3	0	1	0
well, good	1	2	1	1	0

Conrad and Hickok studied the grade placement of literary selections in junior and senior high schools. Their source of data was fifty-four courses of study. They found that twenty-five selections appeared in twenty-three of the courses of study. Ten of these selections had a grade range of six; four, a grade range of five; four, a grade range of four; and seven, a grade range of three. In other words, 40 per cent of the selections were assigned to every grade in the junior and senior high school.

A study of the grade placement of poems that are commonly used in the grades was made by Dyer. Three sources of data were employed. The first source consisted of sixty-one courses of study the contained lists of poems for the various grades of the elementary school and the junior high school. The second source consisted of twenty-one series of elementary school readers. The third source consisted of 201 books written by specialists in the teaching of English. Thirteen of these books listed poems for the separate grades. A list of 161 poems was compiled from these sources. The poems ranged in frequency of mention from twenty to 164. Nearly a fourth of them are suggested for a range of six or more grades.

A number of studies of practices in grade placement were made in connection with the National Survey of Secondary Education. Smith made a study of the placement of literary selections in English courses. She concluded:

> As You Like It is taught in every grade in junior and senior high schools except one. The same is true recent poetry, the 'Rime of the Ancient Mariner, and Ivanhoe'. 'The Lady of the lake' appears in grades 8 through 11. So also do the vision of sir Launfal, the Tale of Two Cities, and Julius Caesar. The mode for Julius Caesar is grade 9, the year for which Irion's study proves it too difficult except for pupils with an intelligence quotient of 110 or higher.

Hilpert studied fifty-six courses of study ranging in size from a single typed page to a bound volume of 262 printed pages to determine the grade placement of topics in art. Eighteen per cent were too brief or indefinite to give an indication of grade placement. Of the remaining courses of study he says:

> There is a general spread of all art topics through every in the secondary school. Most of the art work offered in the seventh and eighth grades is required, while art offered above the ninth grade is chiefly elective. With the exception stage design, clay modeling, and metal craft, all topics were found as low as grade 7 up through grade 12. Certain topics are taught in every grade in a comparatively large number of schools. For example, the topics, art appreciation, design, and drawing are organized into separate courses and taught:
>
> 1. Chiefly as required work in grades 7 and 8,
> 2. Either as a required or an elective course in grades 9 and 10, and
> 3. As an elective course in grades 11 and 12.
>
> Other topics tend to be grouped at certain grade levels.
>
> For example, costume design, interior decoration, figure drawing, and fabric design are more frequently taught in grades 10 and 11 than in the lower grades. Metal craft is found in grades 10. 11, 12, although it is taught in comparatively few schools. The courses of study offer no clue as to the manner of determining the grade placement of topics in art. Some traditional placements are still adhered to because no educational research has been made to determine the proper level for the different topics in art.

Other studies of current practice in grade placement might be given but these are sufficient to show what current practice standards have to offer on the problem. There is no evident tendency for topics in any of the subjects to gravitate to particular grade levels. The same materials in the case of every study are found to be placed in several grads. Consequently, the guidance in grade placement provided by current practice is of little value. At best it suggests a range of grades in which certain content is generally held to be satisfactory.

Current practice has dominated standards of time allotment even more than standards of grade placement. As early as 1905 a study of time allotment was made by Payne, who studied the curricular offerings and time allotted to them in ten cities. This was followed by a study by Holmes in which the number of cities from which data were gathered on time allotment was increased to fifty. More recent studies have been made by Ayer, Kyte, Mann, and Covert.

These several studies vary little in significant findings and implications. This is shown, for example, by comparison of the time found by Ayer, Mann, and Covert, to be devoted to the three R's, the content subjects, and special subjects. These comparisons may be made from the data in Table 2. It will be seen that the three R's receive very nearly the same proportionate allotment of time in every case. Content subject and special subjects receive very much the same proportionate allotment in the cities and states. The consolidated schools give more time proportionately to the content subjects and less to special subjects.

Table 2

Comparieon of the Allotment as Shown in Various Studies

Subjects	*49 Cities* *(Ayer)*	*444 Cities* *(Mann)*	*80 Consolidated Schools* *(Cover)*	*15 States* *(Mann)*
Three R's	50.6	51.7	50.9	48.9
Content	15.5	i1.8	22.7	13.8
Special	33.9	36.5	26.4	37.3

Perhaps the most significant fact brought out by studies of current practice is the extreme variation in the amount of time allotted to various subjects. Mann, whose study is the most extensive of the more recent ones, emphasizes this point especially. He presents for each subject the maximum and minimum allotments in the cities which he studied. He shows that allotment to grades one to six in reading varies in the 444 cities studied from 600 minutes per week to 2,475 minutes per week.

In arithmetic, the variation is from 405 minutes per week to 1,797 minutes per week. When considered in terms of ratios the study shows that in one subject the city giving the maximum time allotment devoted 144 times as much time as the city with the smallest allotment. The smallest difference found is in arithmetic where the largest allotment is 4.4 times greater than the smallest allotment. Table 3, showing all of the variations, is reproduced from Mann's study. From the findings of this investigation the author concludes that "standardization in time allotment practice in the school systems of the United States is totally lacking."

These results reveal how little agreement there is as to what constitutes the amount of time essential for instruction in a given subject.

The weakness of current practice as a basis for grade placement and time allotment should be obvious. It represents the average of many divergent judgments and divergent practices under varying conditions, based upon widely different ideas of what education is and what it should attempt to accomplish. In the particular cases used to make up the average, each item of content and time allotment is associated with a complete plan of curriculum organization.

When these cases are averaged, a result is secured which is entirely dissociated from a given type of curriculum or instructional program and, therefore affords little guidance for time allotment in a given curriculum program. Average practice

Table 3

Ratio of Maximum to Minimum Total Time Allotted to Each Subject by 444 Cities in 1926 By Population Group

Subject	*444 Cities, All Groups Combined*	*Population Group*					
		100,000 or over	*30,000-100,000*	*10,000-30,000*	*5,000-10,000*	*2,500-5,000*	*Less Than 2,500*
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Reading	11.8	4.1	5.6	4.2	10.3	5.5	4.8
Phonics	35.8	11.4	31.3	14.0	10.0	12.4	8.0
Literature	109.0	4,4	8.8	13.3	31.2	22.5	82.5
Language	14.1	3.6	14.1	7.5	5.5	7.4	3.3
Arithmetic	4.4	2.7	3.2	3.8	3.0	2.9	4.0
Penmanship	12.0	2.8	6.3	3.6	2.2	6.4	8.3
Spelling	48.0	5.7	2.8	3.9	3.0	38.0	6.8
Geography	5.4	4.2	4.3	3.9	3.1	5.1	4.0
History	22.9	12.9	6.8	17.9	15.5	17.1	12.0
Social Science	33.8	4.8	6.8	25.6	—	1.4	—

Citizenship and Civics	107.1	5.0	14.3	46.7	40.0	107.1	18.5
Nature Study and Elementary Science	144.0	6.4	8.4	31.3	43.3	108.0	19.0
Art and Drawing	47.6	6.1	17.0	12.0	18.0	40.8	37.4
Music	18.0	2.5	2.5	3.1	3.4	11.0	14.8
Household and Manual Arts	41.4	20.2	41.4	22.0	9.0	13.3	4.4
Handwork	83.3	2.9	31.0	83.0	23.5	27.5	14.0
Projects and Activities	422.5	3.3	422.5	13.3	30.0	20.4	10.0
Health Education	42.0	6.1	21.0	36.0	11.6	19.4	8.7
Physical Training	66.0	5.2	18.7	66.0	12.2	51.0	24.8
Recess	31.9	4.4	18.0	9.6	26.0	8.0	16.0
Opening Exercises	19.7	6.0	7.1	13.3	13.8	8.0	16.1

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Supervised Study	174.3	5.0	108.3	49.5	60.0	154.0	139.2
Unassigned and Free Time	696.7	142.8	293.3	283.3	189.5	117.5	326.6
Miscellaneous	490.7	22.5	66.0	116.7	28.4	59.2	184.0

Table 3 should be read as follows. Among 444 cities of all population groups the city which allots the greatest amount of total time in grades 1-6 to reading gives 11.8 times as much time as the city making the smallest total allotment. Among cities having a population of 100,000 or over, one city allots 4.1 times as much time to reading as another city of the same group. Of those cities belonging to the 30,000-100,000 population group one city allots 5.6 times as much time for reading as another. Data are to be read similarly for other groups and for other subjects.

in time allotment marely assigns a given amount of time to a school subject but does not indicate what the objectives or materials of instruction should be during that time. With this relationship lacking, there is danger that schools using this average standard will set up allotments to cover widely different courses of study. The merits and shortcomings of average current practice as a basis for standards are well summarized in a research bulletin of the National Education Association.

> Is such present practice a safe guide to those charged with the drafting of courses of study? This question cannot be answered with certainty. The opinion and experience of a considerable number of persons is generally more reliable than that of a few. On the other hand *the prevailing practice* is not necessarily *the best practice*. An average of the practice resulting from many discordant ideals may be worthless. Most people would agree, however, that considerable deviation from common practice is justified only for carefully thought out reasons. If for some good reason a city wished to lift the ability of its children considerably above the average standard in a particular subject such as handwriting, an allotment of time to handwriting above that of common practice might be defended.
>
> Such an allotment might also be defensible as a part of a scientific experiment. On the other hand, it would be indefensible to deviate significantly from general practice on no other basis than the vigorously expressed opinion of a few individuals.

Practically, however, it must be recognized that current practice is the only source from which data can be secured for all the subjects and activities included in the offerings of a majority of public schools. Consequently, even in cases where certain other standards are adopted for given subjects or phases of the curriculum, present practice is frequently resorted to in dealing with the remaining phases or subjects.

At least current practice can serve as a check on extreme practices that are not carefully considered in light of the educational needs of the child. It is reasonable to expect the school or teacher who departs widely therefrom to have carefully analyzed reasons for so doing. On the other hand, progress undoubtedly will be made only through departure from current practice, and consequently well-conceived variations should be encouraged.

JUDGMENT OF SPECIALISTS

Judgment of specialists has exerted influence on grade placement and time allotment through a variety of sources. Yearbooks and special studies of professional societies, prepared by committees that are national in scope, have been an especially important source of such influence. Rugg says of this influence that, "curriculum making by national committees was so vigorous that by 1900 the prestige of these committees, made up of subject-matter specialists, was unquestioned."

The first important national committee, the Committee of Ten, indicated the pattern of work for succeeding committees. This committee organized nine separate conferences on a subject basis. Members of the conferences were predominantly college faculty members. All committees made efforts to extend their subject further down into the high school and six of the committees specifically sought a greater time allotment. A great deal of attention was given to standardization of content and to time allotment.

The report of the Committee of Ten was followed immediately by the appointment of the Committee of Fifteen. This committee had the specific responsibility of investigating the length of elementary education. The major outcome of its work was the recommendation of the earlier introduction of certain academic studies such as Latin and algebra.

Work of these committees led in turn to the appointment of various committees in subject fields. The influence of these later committees was especially far-reaching in English and history. The placement of materials in these fields in various grades was dominated almost wholly by such committees, and the organization of the subject matter of English and history in the present school program is largely the result of their influence.

The activities and influence of such committees have continuned up to the present time and most of them have presisted in following the general pattern set by the conferences of the Committee of Ten. The importance of the subject under consideration and the need for consideration of it in the curriculum as a separate field from all other work are emphasized. Recommendations are usually made which would extend the subject further down into the grades or would increase the time allotment, or both. Recent committees of importance include the Classical Investigation (1924), the Modern Language Study (1930), the Committee on Arithmetic of the National Society for the Study of Education (1930), the Committee on Science of the National Society for the Study of Educution (1932), the Committee on Geography of the National Society far the Study of Education (1933), and the Commirsion on the Social Studies of the American Historical Association (1934).

The last of the aforementioned committees represents a hopeful departure in committee procedure and vision. In so far as grade placement and time allotment are concerned it is held that the social studies curriculum should be developed as an integral part of the entire instructional program. The position of the committee is shown by the following statement:

> The program of social science instruction should not be organized as a separate and isolated division of the curriculum but rather should be closely integrated with other activities and subjects so that the entire curriculum of the school may constitute a unified attack upon the complicated problem of life in contemporary society.

Whereas specialists have made operative general limitations on grade placement and time allotment through national committees, they have exerted a more specific influence through textbooks. Due to the textbook domination of the curriculum, the topics included by subject specialists in textbooks and the comparative emphasis given them have served as important determinats of grade placement and time allotment.

It is extremely difficult to evaluate the remmendations of specialists for grade placement and time allotment. Their recommendations, because of their specialized interests, all too frequently emphasize a particular subject unduly. It is the rare specialist who does not feel that his subject should receive more time than it is accorded. The result is a tendency to pit subjects against subjects rather than to look at the educational program as a whole in marking out general time and grade guide lines. This encourages the development of a piecemeal, unrelated instructional program.

There is also a further difficulty encountered when the judgments of specialists are expressed through national committees. The basis of this difficulty is well described by Kelley. When a group of specialists are involved the majority of the group tends to be traditional in point of view. Decisions consequently do not represent the forward-looking point of view in the field, but tend to represent the intrenched position. The result is that few reports of national committees have been liberal or progressive in nature. The point is emphasized by the statement sometimes made that the minority reports of national committees are generally the ones which suggest the direction of progress and development.

Analysis of the sources in which the judgments of specialists as to desirable grade placement and time allotment are presented indicates a tendency to avoid specific recommendations. Reports of national committees appear to be increasing in generality. Consequenily, curriculum committees will find few specific statements by specialists upon which to base practice. Recent yearbooks, mentioned previously, and professional books discuss the issues involved and make general recommendations. In a few cases, as for example the recommended time allotments by the Arithmetic Committee of the National Society for the Study of Education, specific suggestions are made.

EXPERIMENTATION

The number of experimental studies that bear on grade placement and time allotment is surprisingly small when considered in light of the emphasis that has been placed in the past quarter of a century on scientific procedures' There have been several limited studies dealing largely with skills and a very few that are more comprehensive in nature. When considered as a whole, however, investigations in any subject cover such a small part of the subject that they throw relatively little light on the problems of time allotment and grade placement in the large.

The scarcity of experimental evidence on these problems is made especially obvious in the report of the Committee on Arithmetic of the National Society for the Study of Education, a subject in which a large amount of such evidence might be expected. The time allotments recommended are not supported by a single experimental study. The only supporting data are from current practice in public school systems.

A number of studies have been made of the grade in which work in various subjects should begin. Taylor conducted an experimental study bearing on this problem in arithmetic in 1916. He omitted formal work in arithmetic in the first grade for the experimental group. He found that by the time these children completed the third grade they were as capable in arithmetic as children in the control group who had formal work in the first grade. Haggerty studied arithmetic results in schools in Indiana with this point in mind. He concluded that the second grade was the best place to begin formal arithmetic work.

Since these two early studies of the problem, little has been done thet even approaches experimental procedures. Studies have been made of the situations in which young children need and use numbers and number concepts, and of ways of teaching primary number. But the problem is still one that must be determined by judgment based largely on general experience. When attention is turned to the placement of arithmetical topics after formal work is introduced there is even less evidence of an experimental nature.

A committee of the Superientendents' and Principals' Association of Northern Illinois reports a study of the placement of certain topics in arithmetic according to mental age. The committee introduced a series of topics at different grade levels in an effort to discover at what mental age children learn most effectively certain phases of arithmetic and what mastery of more elementary facts is necessary for the effective learning of various phases. Certain minimal mental-age levels and achievement scores in arithmetic are specified which the findings indicate are necessary for effective mastery of various phases of arithmetic.

In considering the grade placement of topics in arithmetic, Buswell and Judd point out the wide divergence of practice and indicate the general lack of evidence with which to solve the difficulty. They state: "...there is the widest possible divergence regarding the distribution of topics throughout the grades ..... What has been done up to this time opens the way to analytical study but can hardly be said to have determined, with anything like completeness, the proper content and arrangement of the topics of the course."

The situation is revealed even more strikingly by Brownell's analysis of research in arithmetic. He does not report a single controlled-group experiment on grade placement or time allotment. In fact, all of the studies on grade placement use the "consensus techinque" or "analysis of school records and marks." The same is true of studies of time allotment, with one exception, in which case the "special training technique" is used. One can only conclude that the extent of experimentally verified evidence on the problems of grade placement and time allotment in arithmetic is practically *nil.*

Arithmetic is selected for rather extended consideration on this point because in this field especially it might be expected to find experimentally verified evidence. The condition found is typical of other fields. For example, Mann states of the situation in reading: "A search through the literature on reading fails to show any conclusive experimental evidence bearing on the amount of time necessary for instruction in reading." In fact, in no field has the optimum grade placement, sequence, or time allotment of topics been verified experimentally. Arrangement rests almost wholly on current practice and judgment of specialists.

When all available evidence that has experimental verification is considered, it seems necessary to conclude that there is practically no help provided for treating the problems of grade placement and time allotment. This matter is given further consideration in a discussion, later in this chapter, of difficulty as a basis for determining standards of grade placement and time allotment.

PRACTICE IN EXPERIMENTAL SCHOOLS

Practice in experimental schools of the progressive type has exerted a marked influence on grade placement and time allotment. This practice differs markedly from most public school practice. This is due largely to emphasis on different bases of placement and allotment. Whereas the other sources of recommendations and standards rest largely on difficulty of content and logical relationships of subject matter, experimental schools have emphasized the importance of pupil interests, aptitudes, and needs. As a result, the tendency has been for experimental schools to depart from the rigidity characteristic of public school grade placement and time allotment.

The position of the progressive group of experimental schools on time allotment and grade placement is rather well indicated by Rugg and Shumaker's contrast of the daily program in a traditional and a progressive school.

> The first difference is one of flexibility. The program of the formal school is rigid, permanent; that of the child-centered school is very flexible, tentative. The former is a scheme of narrow pigeonholes: spelling from 9:20 to 9:35, penmanship from 9:35 to 9:45, oral or written composition from 9:45 to 10:00, and so forth.
>
> A day in a child-centered school, however, is a much more flexible affair. ... It is, indeed, merely a provisional plan for the work of the class. Certain intervals in the day must be arranged for in advance—those, for example, that make use of special teachers in shop, laboratory, gymnasium, music room, and library. But the preponderance of the day in a child-centered school is left relatively unprogrammed......
>
> Flexibility! Schedules so tentative that educative units may be developed, "rich in group and individual activity; in opportunity for developing responsibility, initiative co-operation, and scientific attitude; in the need for information and skill; and in social meaning."
>
> A daily program planned in part by the pupils themselves; partially evolving from the newly discovered interests and needs of pupils, and partly planned, in skeleton only, in advance by the teacher. Finality in scheduled details is incompatible, therefore, with both the aims and the content of the new education.

Grade placement and time allotment according to this point of view obviously cannot be set up in final form in advance, nor can they be made by subjects. Rather, grade placement tends to be in terms of large centers of interest or units of work, and time allotment in terms of major divisions of the school day for types of activities. These are held as general guides and the details are developed as the work with a particular class progresses. But even the general guides may be modified if the teacher feels that some other plan of work would be more valuable for the pupils. The daily program presented on the following page illustrates these general characteristics.

<table>
<tr><th>Time</th><th>Monday</th><th>Tuesday</th><th>Wendesday</th><th>Thursday</th><th>Friday</th></tr>
<tr><td>9: 00</td><td colspan="5">Informal greeting, reports, observations, rhymes, music, events of current interest, informal activities designed to create a mental set conducive to a happy profitable day.</td></tr>
<tr><td>9: 15</td><td colspan="5">ARITHMETICAL ENTERPRISES
Play stores, banking activities, handling of school supplies, etc. Although rich in arithmetical content through which the child a trained in skills and abilities, such units also yield abundantly in group and individual situations which develop initiative, responsibility and co-operation. The flexible period provides opportunity for individual instruction.</td></tr>
<tr><td>10: 00</td><td colspan="5">HEALTHFUL LIVING ENTERPRISES
Physical education enterprises, free play, the nutrition program, and adequate relief periods are provided for daily; units of work, such as; "the study of milk," "a balanced meal," etc., provide enterprises which have healthful living as a center of interest but provide situations developmental of social and civic attitudes as well.</td></tr>
<tr><td>10: 50</td><td colspan="5">LANGUAGE ARTS
Oral and written composition, spelling and writing developed from activities rich in opportunities for</td></tr>
</table>

	expression, as the writing of a play to be presented in the auditorium period, puppet shows, the school newspaper, etc. The period should provide opportunity for literary discrimination and original expression; the long period provides for concentration of effort and attention according to individual interest and need.				
12:00	Lunch, Rest, and Directed Playground Activities				
1:00	Music:	Avocational Activities			
	Activities, music appreciation, rhythm, harmonica, band, orchestra, etc.	Nature Club, school museum, aquarium, gardens, terrarium.	Creative Art and constructive activities in pottery, weaving, painting drawing.	Use of auditorium music, dancing, dramatics, projects, stagecraft, related to class activities.	Civics Club, Committees responsible for various phases of school life.
1:50	Recreation and Rest				
2:00	READING GROUPS: LIBRARY ACTIVITIES Group organization on the basis of reading ability provides opportunity for remedial work with children having reading deficiencies and library guidance to superior readers. The quiet reading period may contribute to the development of information needed in the class activities related to social science, avocational, or health or other interests.				
2:50	Recreation and Rest				
3:00	Social studies activities	Social studies activities	Free careative work period	Social studies activities	Shop enterprises

The influence of experimental schools, therefore, on grade placement and time allotment has been in the direction of increasing flexibility. This influence, while not so widespread as sometimes believed, judging from present courses of study, unquestionably has done much to liberalize public school practice on these points. The administrator who demands that above all else the teacher devote to each subject the precise number of minutes assigned it and to each topic its exact proportion of time is undoubtedly more rare than in former years. This may be accounted for to a considerable extent by the impact of experimental school practices on public schools.

It is difficult to know just how far experimental school practices provide a safe guide for public schools. Manifestly it is the purpose of such schools to try new and unverified procedures. Consequently, it is important that the experience of the experimental school be of such type and duration as to show the procedure to be a good one before it is adopted elsewhere.

The situation is complicated also by the fact that experimental school frequently deal with highly selected pupils and have especially well-prepared and capable teachers. They can, consequently, secure a higher quality of work from the pupils than in ordinary cases and place larger responsibilities on teachers than could be assumed successfully by the average teacher. Nevertheless, those practices in regard to time allotment and grade placement which prove successful in experimental schools may advisedly be given gradual trial in public school systems.

BASES OF RECOMMENDATIONS AND STANDARDS FOR GRADE PLACEMENT AND TIME ALLOTMENT

The sources of recommendations and standards for grade placement and time allotment rest on certain bases. That is, standards recommended by specialists may be based on judgment of the difficulty of the materials to be taught; practices in experimental schools may rest largely on the interests of the children taught; and so with the other sources of recommendations and standards. There are, in fact, three bases upon which these various sources of recommendations and standards may rest. They are :

1. logical relationship of subject matter,
2. difficulty of subject matter, and
3. interests of pupils.

LOGICAL RELATIONSHIP OF SUBJECT MATTER

The relation of logically organized subject matter to the selection of content has been discussed at some length in the preceding chapter. This relationship may exert considerable influence on grade placement and time allotment. This is especially true if the "subject matter" procedure of defining the scope of the curriculum is employed. For example, if a particular subject is to be taught in a particular grade, the logical relationships in the subject may be permitted to dictate what the content of the course will be and the order in which it will be treated. This automatically determines grade placement of topics and influences in a vital way the time that may be devoted to each.

For example, if ancient history is to be taught in a particular grade, there are certain facts, events, and generalizations which mark essential steps in the development of ancient civilizations. These facts, events, and generalizations, are automatically placed in sequence in the grade to which ancient history is allocated. It is the relationship of one to the other and the need of one for an understanding of the other that dictates their inclusion. Or it is frequently contended that the child must develop arithmetical abilities in a prescribed order.

He must move through a series of number processes because of the logic of the series. Division, for example, must follow addition and subtraction.

This position has a certain amount of validity but it may lead to gross violations of conditions for effective learning. There are, undoubtedly, certain stages of growth and development which have discernible characteristics which are significant for education. But that the minute classification of abilities and their development according to their logical antecedent is desirable is another matter.

It is to be doubted, for example, that a child does in fact first learn addition, and then subtraction, and then division. He most probably learns them all together. That is, as a three-year old he begins to ask for two pieces of candy and half a banana. The concept of division does not wait for the concept of addition to reach a specified stage and then begin development. It has its beginning apparently along with addition in a large, general, indistinct concept of number.

Whitehead discusses the relationship of the necessary antecedence of subjects to the basis of organizing subject matter.

> It is impossible to read *Hamelt* until you can read; and the study of integers must precede the study of fractions. And yet even this firm principle dissolves under scrutiny. It is certainly true, but it is only true if you give an artificial limitation to the concept of a subject for study. The danger of the principle is that it is accepted in one sense, for which it is almost a necessary truth, and that it is applied in another sense for which it is false.
>
> You cannot read Homer before you can read; but many a child, and in ages past many a man, has sailed with Odysseus over the seas of Romance by the help of the spoken word of a mother, or of some wandering bard. The uncritical application of the principle of the necessary antecedence of some subjects to others has, in the hands of dull people with a turn for organization, produced in education the dryness of the Sahara.

A second factor requires consideration in the use of the logical arrangement of subject matter as the basis of grade placement. What the essential facts, events, and generalizations are in a particular subject is usually left to the judgment of specialists. We sometimes assume a considerable unanimity in their judgments on this point. That is, ancient history is ancient history no matter who deals with it and algebra is algebra regardless of personalities. Analyses of topics and materials included in textbooks, however, indicate that judgments vary widely as to just what is essential for mastery of most subjects. These considerations should lead the curriculum worker to question critically any content which for the reason alone of logical relationship with other content is held to require particular grade placement or time allotment.

DIFFICULTY OF SUBJECT MATTER

Difficulty of subject matter is probably the most generally favored basis for grade placement and time allotment. The work of educational psychologists and of specialists in elementary school subjects especially emphasizes this basis. The general procedure is to determine first of all the relative difficulty of various items of subject matter in the particular subject. Logical analysis and studies of the ability of pupils to learn the various items are the techniques most frequently employed. Consensus of opinion, case studies, and other techniques are used occasionally.

The various items are next arranged in sequence from the most easily mastered item to the one most difficult to master. This sequence determines the grade placement of materials once the beginning grade is set. Traditional practice and judgement exert the greatest influence on determining the grade at which the subject is introduced. Length of time assigned to each item of subject matter under present practice is largely determined by the number of items that must be covered by each grade in order to complete the material included in the subject.

This basis is emphasized in several subjects. A number of studies have been made that are designed to determine difficulty and thus make grade placement and time allotment on this basis possible. Brownell reports eleven such studies in arithmetic. One of these is based on the consensus technique and the remaining ten on logical analysis.

Thus logical analysis is employed almost exclusively in determining steps of difficulty in arithmetic. This means, of course, that what is known about difficulty in arithmetic rests largely on judgment. More adequate studies have been made of the difficulty of number combinations, but even here conclusions are highly tentative. Knight points out that data are inadequate to determine difficulty with assurance in the case of most arithmetical processes. He states :

> Perhaps of greater damage than our relative ingorance of interference factors is our relative ignorance of the learning difficulty of many of the important items to be learned. Amounts of practice needed to learn most items are yet to be determined or even approximated.

In geography difficulty is also emphasized as a basis for grade placement. The National Society for the Study of Education Yearbook Committee on Geography states : "Materials should be carefully graded on the basis of their relative difficulty." They define seven levels of difficulty in geographical materials. These levels were determined by logical analysis and error studies. Each level of difficulty is made the basis of the work of one grade. Current practice is followed in recommending that geography start in grade four. Thus, grade four is assigned materials of difficulty level I, grade five of level II, and so on.

Webb endeavered to determine the difficulty of various materials in science. He analyzed eighteen textbooks to discover the amount of space devoted to certain major divisions. He devised tests upon the material and tested from one thousand to two thousand pupils in each grade of the elementary school. Success in the items of the tests is used as the basis of determining difficulty. He concludes that physiology and physiography are suitable in the sixth grade; biology in the seventh; and physics in the eigth. Chemistry is of doubtful value in any of the grammar grades.

Mathews' study of the extent to which pupils in the public school in grades four to twelve inclusive comprehend various types of social studies materials involves consideration of difficulty. The measure of difficulty employed is the percentage of objective questions dealing with the various types of material correctly answered by the median of each group of pupils. A sample of each type of material was tried in three grades. The types of materials included in the samples were : episodes; descriptions; newspaper articles; expositions; bar, line, and circular graphs; time lines; pictograms; and maps. The conclusions reached were :

1. ability to comprehend and interpret graphic selections increased gradually from the fourth to the twelfth year;
2. episodes are comprehended better than other types of material in all grades except the sixth and the ninth;
3. the circular graph is the easiest and the line is the most difficult to comprehend, while the bar graph is midway between.

Cavins made a study in which he assigned various poems to grade levels he found to he most appropriate. Difficulty was the primary basis of assignment. His procedure was to ask a group of experts what they considered the most important factors involved in determining the place of a particular poem in the course of study.

The factors in the placement of a poem most frequently mentioned by the experts were experience required for interpreting the poem, factual background, abstractness of theme, diction and style of language, mater, imagery, and narrative thread. The majority of these, it will be noted, relate to difficulty. With these factors as a guide he prepared tests to measure pupil understanding of selected poems in grades five to eight. Each test item was decided upon according to whether it represented the difficulties of the particular poem and whether it tested the ability of the pupil to understand the difficulties. Upon the basis of the results of the test, poems were assigned to the various grades.

A number of efforts have been made to determine the relative difficulty of reading materials. Kyte reports such a study that was made as a basis for developing a series of readers. Fiftyfour selections were chosen arbitrarily. Tests were then devised to measure the difficulty of the selections. These tests were administered to the second, third, and fourth grades. Selections that were too easy for more than 80 per cent of the pupils were considered inappropriate. It was concluded that 40 per cent of the reading materials selected upon the basis of individual opinion would be ill-adapted to the-grade assigned and that arrangement of materials on the same basis in a text would be chaotic.

Mullins, Stone, and Reed attempted to devise a statistical procedure whereby French selections could be rated for difficulty. They studied the relationships of vocabulary, sentence structure, and idioms. A refined statistical technique was employed in an effort to discover a basis upon which the difficulty of selections might be determined. They conclude: " . . . it seems that the determination of the difficulty of a selection of literature is such a complex problem that it cannot be attained by statistical computation."

Other studies might be mentioned, but the foregoing provide a reasonably representative list. When all subjects are considered this basis has probably exerted greater influence than any other on recommendations and standards of time allotment and grade placement. Although it is a basis looked upon with considerable favor, it rests upon a basic assumption which is open to question. This assumption is that intellectual growth proceeds most effectively by advancing from simple to more difficult learnings. There is some evidence which leads to the questioning of the soundness of this assumption as applied to all situations and cases. In the first place, it is doubtful if learning as a rule actually proceeds in this way. Many times complex learnings precede simple learnings. Whitehead states this matter forcefully :

> It is not true that the easier subjects should precede the harder. On the contrary, some of the hardest must come first because nature so dictates, and because they are essential to life. The first intellectual task which confronts an infant is the acquirement of spoken lauguage. What an appalling task, the correlation of meanings with sounds! It requires an analysis of ideas and an analysis of sounds. We all know that the infant does it, and that the miracle of his achievement is explicable. But so are all miracles, and yet to the wise they remain miracles. All I ask is that with this example staring us in the face we should cease talking nonsense about postponing the harder subjects.
>
> What is the next subject in the education of the infant minds? The acquirement of written language; that is to say, the correlation of sounds with shapes. Great heavens! Have our educationists gone mad? They are setting babbling mites of six years old to tasks which might daunt a sage after lifelong toil. Again, the hardest task in mathematics is the study of the elements of algebra, and yet this stage must precede the comparative simplicity of the differential calculus.

In the second place, there are some grounds to beileve that the initial attack on a problem or step in an undertaking or development of an idea must by the very nature of the situation be the most difficult one in so far as learning is concerned. That is, the individual must first of all get a general idea of what the problem or undertaking or idea is about. He must test it here and there trying to find out what its general characteristics are and what elements are involved in it. This is a most trying, slow, and frequently tedious process.

But as the elements of the situation begin to clarify or to become differentiated, attack may be made on more specific aspects of the situation and learning may increase in speed as it becomes more simple in nature. The further the individual proceeds with the endeavor the more simple do things learned frequently tend to become. The child, for example, beginning work with addition has the overwhelming task of finding out the characteristics of addition. To him, at most, it is a very general idea. Addition facts must be associated with a wealth of content.

They must be treated slowly. But as he moves forward and the idea of addition grows he can deal with increasing readiness with the specific facts involved in addition. Addition consequently becomes easier rather than more difficult as he progresses.

Obviously this concept of addition is in direct opposition to the concept that memory of addition facts represents effective knowledge of addition. Addition facts are merely the means of arriving at a convenient common practice and a way of thinking is the important thing. Consequently, if difficulty is related to understanding, to ideas, to problems, rather than to mere memory, there is reason to believe that in many cases we tend to proceed from the difficult to the less difficult.

In the third place, difficulty as a basis for grade placement and time allotment is open to question because of the fact that intensity of stimulus may make a difficult thing easier. For example, given processes x and y to be learned, y may be learned much more readily than x even though more difficult if the learner has a strong stimulus to learn y and a weak stimulus to learn x.

In the fourth place, grade placement and allotment of time in terms of comparative difficulty overlooks the wide variability of achievement and ability within a group of children on a given grade level. When children in the same grade vary, as they do, three, four, and five grades in achievement in the several subject and fifty to sixty points in intelligence, it is impossible for them as a grade to study material of uniform difficuly.

These considerations lead to the conclusion that difficulty merits much more critical evaluation as a basis for grade placement and time allotment than it is usually accorded. Undoubtedly it is of some significance, but it is highly questionable that the analytical studies that propose to reduce the steps in learning to scientific accuracy and the materials used to statistical certainty of fitness can be followed safely. Evidence on this point will have to be much more conclusive than it now is to warrant the minute following of the requirements of difficulty in grade placement and time allotment when even an individual teacher's or supervisor's judgment indicates something else to be better for a child.

INTERESTS OF PUPILS

In the preceding chapter interests of pupils were considered as a general basis for selecting subject matter. As a basis for grade placement interests may be used in two ways. First, the interests of a particular group of children may be permitted to determine the placement of subject matter. That is, what a given group of children are interested in at a given time and the duration of their interest may determine what books they read, what references they use, what facts they employ, what they write about, and so on. Time allotment may be determined in the same way.

The children may be permitted to spend as much time on a particular phase of subject matter as they care to spend. This procedure places the entire burden of determining desirable grade placement and time allotment on the teacher.

Second, interests that tend to be common to the respective grades may be made the basis for placing subject matter on grade levels. For example, if it is found that pupils generally in the fourth grade are interested in airplanes, then material about airplanes is considered appropriate for the fourth grade. If pupils in the fifth grade generally are found to like a particular poem or story, then that poem or story is considered appropriate for that grade.

When interest is used in this second way, studies of the characteristics of interests common to pupils on the several grade levels are necessary. A limited number of such studies have been made. One of the first of such studies was made by King. She enlisted the aid of the school superintendents and supervisors in ten representative cities. A day or two before the experiment the children in all the grades were asked to think over poems which they had learned or read and to select at least two that they liked best.

They were also asked, but not compelled, to state why they liked them. Using the results thus obtained, the poems with the highest frequency of mention in each grade were listed in a suggested course of study. From the reasons given by the children as to why they liked them, lists were also made around centers of interest. Typical of these interests are : poems about nature, poems about life, poems appealing to the emotions, story-telling poems, social poems, patriotic poems, and humorous poems.

Another study of the poems to be included in the various grades using interest as a basis was made by Huber, Bruner, and Curry. They conducted an extensive experiment lasting two years to determine the poetry most suitable for children in the elementary and junior high school.

The first step taken in this study was to determine present practice. This was done in two ways. First, they considered the subjective opinion of expert teachers of poetry. Second they examined 900 courses of study and practically all of the most used textbooks and made a minute analysis of thirty of each of the books used in grades one to nine. From these analyses preliminary lists of poems were prepared to be submitted to the children.

The experimental list, which consisted of approximately one hundred poems for each grade, was published in experimental booklets and put into the hands of about fifty thousand children in experimental centers. The administrative organization was so developed that each booklet was used in five different grades. The plan of experimentation consisted in having the pupils come in contact with a certain number of poems and asking the pupils to check which they liked best and which they liked least. During a study of sixty poems twelve definite reactions from each child were recorded. Out of 573 poems used in the experiment, only fifty-nine or 10.3 per cent of the entire list rank among the upper fifty poems of three or more grades. Results of this experiment show that present practice is only 39 per cent right.

These authors also suggested centers of interest in sequence of the various grades : animals and play, lullabies, fairy poems, humor and nonsense, heroes, home and danger, satire, romance and tragedy, and seeking the causes of things.

An extended study of the grade placement of books suitable for the independent reading of children on various grade levels has been made under the general direction of Washburne. This study was carried forward initially in the research department of the Winnetka, Illinois public schools. The result was the preparation of the *Winnetka Graded Book List*. Later the study was exteneded in co-operation with the Children's Committee of the American Library Association and a list of books suitable for pre-school children, children in each grade of the elementary school, and in junior high school was prepared for the guidance of parents, teachers, and librarians. This list is entitled *The Right Book for the Right Child.*

The technique employed in preparing this list involves both pupil interest and difficulty. The ultimate criterion, however, is pupil interest and for this reason the study is classified under this heading. The general procedure was to secure a list of books which children of known age, sex, and reading ability had read and enjoyed. In the primary grades a selected group of experienced primary teachers listed the book which they found most interesting to children and indicated the grade for which each book was most appropriate.

In the remaining grades a large number of pupils indicated how well they liked various books. This list of books in terms of preference shown for them by children on various grade levels formed the basis for developing a procedure by means of which books of unknown qualities might be allocated to grades. The procedure for allocation is highly technical. The statistical result implies that it is possible to place books for which the degree of pupil interest or preference is not known on grade levels where pupils have expressed a preference for books of similar characteristics.

The place of pupil interest in organizing instruction has already been considered at some length Little need beadded here to that discussion. As pointed out there, spontaneous, unguided interests of children do not provide a sound basis for organizing instruction and consequently for selecting subject matter for grade levels. On the other hand, fundamental interest which rests upon experiences that provide a basis of understanding is essential to learning. Consequently, studies of interests commonly found in various stages of the child's development may provide valuable data for grade placement.

FACTORS FREQUENTLY OVERLOOKED IN GRADE PLACEMENT AND TIME ALLOTMENT

There are a number of important factors that influence grade placement and time allotment which are frequently overlooked. Most of these factors have been suggested in discussing the various bases of grade placement and time allotment. It is the purpose here to call attention specifically to them.

Whatever the method of regulating their progress may be, pupils in a given grade vary widely in achievement of all kinds as well as in capacity to learn. This is a fact of utmost significance to any plan of grade placement and time allotment. Frequently, the fact that a given group of children approximate, on the average, the standard for their grade is permitted to blind the curriculum worker to the fact that the average may represent children of most diverse abilities. For example, the tabulation in Table 4 presents the number of questions in the Thorndike-McCall Reading Test that were answered correctly by children in various half grades of a city school system. Although each succeeding half grade tends to answer more questions correctly than preceding grades, the distribution of questions answered correctly by each grade covers a large portion of the same range.

Table 4

A Summary of the Results on the Thorndike-Mccall Reading Test Presented by Grades and Disregarding age Intelligence Factors

Questions Correct	*Grade*							
	4L	*4H*	*5L*	*5H*	*6L*	*6H*	*7L*	*7H*
1......	1							
2......								
3......	1	1						
4......	2							
5	2		1					
6......	1	1					1	
7......	4		1					1
8.. ...	4	1	1					
9......	1					1		
10......	4	3	1					
11......	4	5	2					
12......	7	5	2			2		
13......	7	1	4	1				
14......	10	4	1	3	1			1
15......	10	3	6		4			1
16......	6	6	5	7	4	1		3

17......	9	10	7	4	4	1	1	1
18......	12	13	7	1	6	1	4	2
19......	12	7	10	8	3	8	6	3
20......	8	6	11	9	6	10	6	5
21......	9	10	10	6	11	13	6	10
22......	7	2	6	8	9	9	9	17
23......	4	5	4	6	8	5	10	10
24......		2	1	6	7	7	12	10
25......	2	3		5	6	3	10	14
26......		3	1	5	4	4	11	9
27......			1	1	5	1	16	2
28......			1	1	4	1	6	2
29......					2	1	3	1
30......							3	2
31......					1			
32......							1	
33......								
34......								
35......								
Number...... of Cases	127	91	83	71	85	68	105	94

The situation is the same when measurement is in terms of more specific abilities. Consider, for example, the data in Table 5 on achievement of lower fifth and seventh grade pupils in paragraph meaning, sentence meaning, and word meaning. Even though the average of the seventh grade is above that of the fifth, much of the range covered by scores is the same.

This variability results in the possibility that any instruction group may have in it pupils of widely varying achievement. For example, one instruction group selected at random in a city school system in grade 6A had the following variability : One

Table 5

Summary of the Results on the Stanford Achievement Tests in Reading

Grade Score in 7-Year Elementary School	*5L*			*7L*		
	Paragraph Meaning	*Sentence Meaning*	*Word Meaning*	*Paragraph Meaning*	*Sentence Meaning*	*Word Meaning*
			2			
	1	1				
	1	2				1
2.8—2.9	2	3	2	1		
3.8—3.1	2	2	5			2
3.2—3.3	2	5	5			
3.35—3.5	5	8	6		4	
3.6	3	8	4		3	
3.7—3.9	7	16	9		4	3
4.0	10	12	8	4	3	
4.05—4.2	15	8	9	1	4	2
4.3—4.5	13	14	18	11	9	6
4.6-4.75	10	9	8	2	6	6
4.8—5.0	3	8	12	2	8	12
5.1—5.2	15	1	7	12	3	6
5.3—5.45	5	5	5	5	9	5
5.5—5.7	3	1	6	4	4	6
5.8—5.9	7	7	6	5	4	7
6.0—6.25	2		2	7	4	6
6.3—6.4	1	2	1	3	3	3
6.5—6.6				1	3	5
6.7—6.8	4	2	2	5	5	4

6.9—7.0	3	1		8	1	2
7.1					1	
7.2—7.3	1	1	1	4		2
7.5					2	1
7.6—7.65	3	2	2	5		2
7.8—7.9	2		1	2	4	3
8.0—8.2	1	3		6	3	2
8.3		1			3	2
8.4—8.7	1			2	1	4
8.8—9.0			1	1		
+		1	1	1	1	2
+	1			4		1
+				1	2	1
+				1	2	2
+						
+					2	
Number of Cases	123	123	123	98	98	98

pupil had a mental age of nine years three months; and another, a mental age of thirteen years three months.

The differences in achievement in the school subjects were even greater than the difference in mental age. In reading, one pupil achieved only as well as an average beginning grade four pupil; another achieved considerably better than an average grade ten pupil. In spelling, one pupil achieved only as well as an average pupil two thirds through grade three; another achieved almost as well as an average beginning grade nine pupil.

In English, the variation was from half way through grade two to the beginning of grade ten, and in arithmetic from half way through grade three to above grade ten. In chronological age, the variation was also great. To find children of all capacities in intelligence in each grade of the public school system is to be expected. It seems, then, rather fantastic to expect to find definite distinctions between grades in suitability of materials and in time required for their mastery. Variability in achievement and capacity of the pupils suggests the need for widely varied subject matter and materials on each grade level rather than uniformity.

A second factor frequently overlooked is that individual pupils vary greatly in different abilities. As a rule it is true that level of ability in one field tends to be associated with a similar ability in other fields. Consequently, the child who is good in one subject or type of activity tends to be good in others. But there are enough exceptions to the rule to complicate the matter of grade placement and time allotment.

For example, a child may equal the sixth grade standard in arithmetic, the fifth grade standard in spelling, and the fourth grade standard in reading. If he is in the fourth grade, it is obvious that much of the material selected for a grade four average would not suit him at all. He needs materials of one type in reading, another type in spelling, and still another type in arithmetic. This leadagain to a need, not for standardized subject matter, but for varied subject matter to meet the needs of each particular child in a given field.

A third factor that is overlooked by certain approaches to the problems of grade placement and time allotment is that certain stages of growth or development are essential for effective participation in certain types of activities. As discussed in the preceding chapter, the fact that specialization with its requirement for mastery of logically organized fields knowledge is characteristic of maturity has been particularly ignored in connection with grade placement. Specialization is a stage of growth or development which is reached through other stages of growth that have thier own peculiar characteristics. But the curriculum has been organized as though it was something that had to be prepared for specifically for many years, and has forced into the lower grades of the schools undue emphasis on logical relationships.

Difficulties are encountered in giving consideration to this factor because of the inadequacy of knowledge about various stages of growth. Such work as has been done is largely with infants and young children. This work, of course, suggests the importance of the problem and possible methods of attack, but throws no particular light on the problem in the period of common school education. Beauchamp points out the need for studies of this type in order to attack the problem of grade placement satisfactorily. He states in connection with a study of grade placement and organization of materials in science that "...the problem of how pupils progress in the development of the ability to use science as a method of thinking should be investigated and should be made a major factor in determining the content and organization of the materials of insruction."

In the meantime until studies are made available to provide exact information concerning the characteristics of various stages of growth and their implications for grade placement and time allotment, judgment, as critical as possible when based on uncontrolled observation, should be used to give this factor consideration in dealing with grade placement and time allotment.

GRADE PLACEMENT AND TIME ALLOTMENT IN PRACTICAL PROGRAMS OF CURRICULUM MAKING

The practical curriculum worker usually seeks a procedure whereby subject matter can be arranged on grade levels and the time required to master is stated with some finality. Optimum arrangement and time allotment are goals long striven for, but as conditions now stand there is little hope of attaining these. So many variable elements are involved in grade placement and time allotment that fixed relationships and quantities cannot be defined as absolutes.

It must be recognized that there are few "specifics" in subject matter to influence mental development in a particular predetermined way. That is, the some desirable way of behev-ing can be induced through a variety of subject matter, and subject matter that will induce it with one person may not do so with another.

Consequently, sa long as children differ radically in their capacities, abilities, aptitudes, and temperements; so long as environmental conditions vary as they now do; so long as the ability and methods of teachers very; so long as our lack of experimentally veriffed evidence is anything like as great on these problems as it now is; the much sough for optimum arrangement of subject matter and optimum allotment of time will not be attained exced as the individual teacher has the insight and judgment to provide it for the individual pupils under his guidance.

In brief, grade placement and time allotment are ultimately resolved into the questions of what is best for a given pupil in a given situation, and how much of time he can afford to devote to it. This individual basis is clearly implied by the principles enunciated by Thorndike and Gates to determine the optimum placement of facts or principles. They state:

1. Other things being equal, introduce a fact or skill at the time or just before the time when it can be used in some serviceable way. This is the criterion of *need.*
2. Other things being equal, introduce a fact or skill at the time when the learner is conscious of the need for it as a means of satisfying some useful ourpose. This may be called the eriterion of *felt need.*
3. Gther things being equal, introduce a fact or skill when it is most suited in difficulty to the ability of the learner. The optimum degree of difficulty is one which challenges the learner to enlist his best efforts but which is not so hard as to lead to failure or serious errors. A person's ability will depend both upon the level of maturity reached through inne growth

and upon the the facts and skills acquired by means of previous experience. This is the criterion of *difficulty*.

4. Other things being equal, introduce a fact of skill when it will harmonize most fully with the level and type of emotions, testes, instinctive and volitional dispositions most active at the time. This may be called the criterion of *temperamental compatibility*.

5. Other thing being equal, introduce a fact or skill when it is most fully facilitated by immediately preceding learnings and when it will most fully facilitate learning which are to follow shortly. This is the criterion of *facilitation*.

What then can the curriculum worker do in regard to the matte, if the ultimate responsibility must be the teacher's ? In practical programs of curriculum making several things can be done to aid teachers in accomplishing this desirable end. In the first place, general guides can be set up.

The Florida State committees, for example, studied current practice, recommendations of specialists, experimental school practices, practices in their own schools, the type of training of their teachers, the demands of the administrative organization of the schools, practices in use of textbooks, and other items relating to the state situation, and then on the basis of judgment set up general guides that appeared to be most satisfactory for Florida schools. Frequently, special studies of the factors that condition grade placement and time allotment in the given school system may advisedly be undertaken. Studies of prevailing practice, pupil interests, environmental conditions, and materials found most useful by teachers may be found valuable.

In the second place, a variety of suitable subject matter and possible points of emphasis may be suggested. So long as coditions make it necessary for the teacher to make the ultimate adjustment in grade placement and time allotment in terms of individual pupil needs, this adjustment will be most adequately made if the curriculum worker suggests to the teacher a wide variety of possibilities.

The effort should not be to suggest subject matter of one level of difficulty on a given grade level, but rather of many levels of difficulty, not to suggest books that deal with a limited group of interests but that deal with a wide group of interests. Similarly, varied ways of arranging emphasis in terms of time should be suggested rather than one only.

Closely related to the foregoing point is the provision for flexibility. Curriculum making can aid in achieving wise grade placement and time allotment if the individual teacher is permitted flexibility to adjust subject matter and time allotment to pupil needs, interests, and abilities. If limitations are made in genaral and variety of suggestions are given the intelligent teacher, it permitted flexibility in developing his program, will make a much wiser grade placement and time allotment for a given group of children than the curriculum worker considering children in general can possibly make. The poorer teacher can still be guided in the selection of one particular plan and be too worse off than previously.

In the fourth place, more effective time allotment and grade placement can be achieved if specific help is given teachers to develop programs of work. Most teachers have worked so long under rather severe restrictions in grade placement and time allotment that they require considerable help in organizing programs of work that meet adequately the needs of particular groups of children and school situations.

Consequently, if desirable flexibility is provided in grade placement and time allotment' teachers must have a great deal of help and guidance in its wise use. Frequently, the mistake is made of trying to shift suddenly and completely from one type of program of work to another type. A curriculum program should provide opportunity for teachers to grow gradually from the particular point where they are toward more effective programs. Provision of opportunity to do this and guidance in its accomplishment is one of the ways in which effective grade placement and time allotment may be achieved through curriculum making.

In practical programs of curriculum making then, it will be found possible to aid in achieving optimum grade placement and time allotment:

1. by providing general guides for the work of the several grades,
2. by suggesting a variety of suitable subject matter and points of emphasis,
3. by providing for flexibility' and
4. by providing aids for teachers to develop programs of work that fit their particular situations.

In doing these things it will be found necessary to employ a variety of sources of recommendations and standards, to study the various bases of these, to study the particular situation at hand, and finally to make a judgment as to what is most appropriate.

11

Objectives and Curricula

Thus far our discussion has centered on the one hand around the elements of the curriculum that relate to the aims and purposes of society and the means of achieving them through the schools, and, on the other hand, around the interests, purposes, and activities of children. Activity on the part of the teacher as the immediate agent of society has been implied throughout the discussion.

We turn now to consideration of the activities in which the teacher engages in order to carry forward the educative process. The number and variety of such activities may be extended almost without limit. Even when reduced to types of activities they constitute a list of such proportions as to be both confusing and discouraging. Charters and Waples, from a number of source, compiled a list of approximately twelve thousand duties or activities engaged in by teachers. These they classified by types under seven main divisions which contain one thousand and one different statements of teacher activities. Out of such a maze of possible activities there arises the necessity of providing some means of selecting and organizing teacher activities appropriate to the teacher's immediate task. Such selection and organization of teacher activities we designate as teaching procedures.

CONCEPTS OF TEACHING PROCEDURES

A distinction should be make between the use of the terms teaching method and teaching procedure. Method is commonly thought of as an adopted pattern or a special or definite system of procedure.

Thus, we refer to the inductive or the deductive method of reasoning, the lecture method, or the question-and-answer method of teaching a lesson. In either case of general pattern or plan determines the manner of selecting and organizing the specific activities engaged in.

In other words, it determines the teaching procedure. In the traditional organization of instruction, activities tend to becomes in fact a special method. Thus, we refer to a special method of teaching subtraction or reading or the use of the comma. Each of these methods requires certain teacher activities often developed in great detail. This concept of teaching procedures as a series of special methods admits the possibility of setting forth entire course of section in detail in advance.

On the contrary, the concept of teaching procedures here employed is that specific things to be done by the teacher cannot be determinee in advance, but that guides or procedures may be provided that will make possible suitable choice and organization of teacher activities as they may be dictated by the situation in which they are to be used.

It is not suggested that the teacher must eschew teaching methods. On the contrary, if the teacher is to choose his activities wisely an even wider acquaintance with various methods of instruction is necessary than would be required if his way were charted in detail in advance. Such a concept of teaching procedure requires an evolving method rather than a predetermined one. In order to develop effective procedures to meet day-to-day situations as they arise, it is necessary that teachers not merely know a method but that they know many methods, and that they be able to choose activities appropriate to pupil needs at the moment.

Implications for general method are considered under the general question of organizing instruction. We turn, therefore, to consideration of teaching procedures implied by such a plan of organization and in accord with the concept pointed out above.

The selection and organization of teacher activities involve a plan of action. A plan of action is merely a proposed series of activities so related that the individual may reasonably expect that they will result in the desired outcomes. In accord with the concept of the curriculum help by the writers, teacher activities may be conveniently divided into four general classes which indicate major steps of teaching procedure.

It is recognized that other classifications might be just as appropriate as those here used. It is further recognized that this classification holds no particular implication for the organization of instruction although it is in accord with the organization suggested in the succeeding chapter. The classifications here treated are:

1. teacher activities that have to do with the study of the environment;
2. teacher activities that have to do with the study of the pupils;
3. teacher activities that have to do with the limitations of the curriculum; and
4. teacher activities that have to do with the direction of pupil activities.

TEACHER ACTIVITIES THAT HAVE TO DO WITH THE STUDY OF THE ENVIRONMENT

The general environment of children exerts a marked influence upon the nature of the activities engaged in and the results obtained in the schools. Information concerning various elements in the environment is, therefore, essential to proper organization of the teacher's work. Rankin says :

> The school dare not work independently of these factors, but should make periodically a survey of the general conditions to the community. On the basis of the findings various steps may be taken. Gaps in requisite governmental service may be brought to the attention of the proper authorities and when necessary a campaign for extension may be launched. Specific activities may be instituted in the school program to develop in children the power to select intelligently among the many possibilities offered by commercial agencies such as the radio and the motion pictures. When general community influnences are impossible to change, the school may need to introduce new activities calculated to take the place of desired factilities that are lacking, or to compensate for harmful influences.

Information concerning the environment may be obtained by means of a continuing community survey. In some school system provision is made for a central agency to gather such information and to make it available to the teachers. However, in the absence of such provision, the teacher will find it necessary to make an independent study of environmental factors as far as psssible. The following items are usually included in a community survey:

Types of homes in the community
Types of industries
Occupations of parents
Community organizations
Natural resources
Public buildings
Community attitudes
Recreations
Items of unusual historic of scientific interest
Newspapers
Public records
Traditions and customs peculiar to the community.

In order to secure such information a number of specific activities on the part of teacher are necessary. Among these are:

Visiting homes

Visiting places of business

Talking with public officials, ministers, laborers, business men, social leaders, housewives, physicians, etc.

Tabulating meterials gathered by observation, interview, reading, and from records

Making graphs, charts, etc, to show graphically the results of the survey

Developing plans for cumulative inventory.

Numerous sources of help are available to the teacher in discovering and organizing environmental data. For example, Symonds devotes a chapter to a disussion of "measures of the environment" under the following major heads: measures of occupational level; measures of the home; measures of socio-economic level; and testing for cultural background. Under each of these heads the author describes and illustrates the various attempts to measure:

(*a*) Occupation level,

(*b*) Home background,

(*c*) Certain combinations of the two, and

(*d*) Attempts to get at the cultural background through the cultural responses of the children.

Table 1 describes a number of tests, scales, and score cards that have been devised for measuring various environmental factors. A study of such measuring instruments should be helpful to teachers.

In order for environmental data to have significance, observations must be made continuously and the results recorded and interpreted. A single snapshot of an environmental condition is of little value. It may even be positively misleading. Such information becomes valuable to the teacher only when it serves to make the total environmental picture more nearly complete. Thus there is need for consistent use of a cumulative inventory of environmental data. The form on the facing page suggests a simple means of providing such an inventory.

TEACHER ACTIVITIES THAT HAVE TO DO WITH THE STUDY OF PUPILS

The importance of securing information about pupils is generally recognized. The teacher activities necessary to secure such information fall into two general classes: those that relate to the characteristics of pupils as a group, and those that relate to the characteristics of the different individuals in the group.

The study of characteristics of children of a given age group requires reference to various studies from the field of psychology. Data may also be derived from the teacher's own observation. Information of particular value to the teacher at this point should include significant facts concerning physical condition and mental growth of children; the characteristic attitutudes, activities, social traits, and interests, of children at various levels of maturity.

> Only information which significantly influences instruction should be recorded. This inventory should assist teachers in selecting interest suitable for developing units of work. It should be checked each time a unit is initiated and additional interests recorded. This inventory should be carefully kept and a copy passed on from year to year to the teacher of the group. Additional copies of these sheets can be secured from the State Department of Education.

School...... ....City or County.................

Grade or Grades..................Year..............Teacher...........

Environmental Data for Instructional Purposes

Types of Homes:
(Permanent, tenant, etc.)

Public Buildings:
(Courthouse, churches, schools, etc.)

Community Services:
Fire department, banks, nurses, etc.)

Public Officials:
(Judge, policemen, etc.)

Historical Materials:
(Markers, homes, etc.)

Natural Materials:
(Caves, quarries, wild flowers, etc.)

Industries:
(Lumber, dairying, etc.)

Occupations:
(Farmers, merchants, etc.)

Community Organizations:
(Music clubs, community leagues, etc.)

Recreational Facilities:
(Parks, movies, etc.)

Attitudes:
(Interested in education, etc.)

Needs of School and Community

Needs of the School and Community	Improvements Through Pupil Participation
(Record as observed in light of data)	

In order to secure such information the teacher will find it desirable to engage in activities, such as studying the results of research with specific reference to all these points; studying psychologies that deal with information applicable to the group under consideration; reading reports of observations of successful teachers: making, recording, and organizing observations from personal contacts with pupils.

Table 1

Instruments for Measuring Factors of the Environment

Author	*Source*	*Type*	*Designed for*	*Purpose of the Test*	*Content of the Test*
1	*2*	*3*	*4*	*5*	*6*
Burdick, Edith	Appreciation Test, The Association Press, 347 Madison Avenue, New York, 1928.	Environment Test	Grades 5 to 8	Designed to measure the social level of the home background.	There are 11 parts dealing with such items as naming furniture, duties, in the home and who performs them, situations and outcomes, vocational expectations, associations, etc.
Chapin, F. Stuart	"A Scale for Rating Living-Room Equipment," Institute of Child Welfare, University of Minnesota, Minneapolis, Minnesota, 1930,	Environment Scale	Any home	To measure the socio-economic status of the home.	Contains 53 items relating to living-room furniture, which items are divided into four divisions : fixtures built in features, standard furniture and furnishings, and cultural reasoures.

Clark, W.W. and Williams, J.H.	"Whittier Scale for Grading Neighborhood Conditions, California Bureau of Juvenile Research, Whittier, California, 1919.	Environment Scale	Any community	To measure the social adequacy of neighborhood conditions.	There are five scales, namely (1) neatness, sanitation, improvements : (2) recreational facilities ; (3) institutions and establishments ; (4) social status of residents : (5) average quality of home,
McCormick, Mary J.	"Social Adequacy Measuring Scale, C.H. Stoelting Co., Chicago, Illinois, 1931.	Environment Scale	Any family	To measure the social adequacy of families.	The items most of which are answered by yes or no, are in four groups : (1) quality of neighborhood : (2) education, occupation, and civic status ; (3) material status of home ; (4) cultural and social influences.
Sims, Verner M.	"Soure Card of Socio-Economic Status, Public School Publishing Company, Bloomington, Illinois, 1927.	Environment Score Card	Grades 4 to 12.	For ascertaining and recording the general cultural, social, and economic background.	Consists of 25 items regarding the home to be answered by the pupils. Most answers are of the yes or no type.

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*
Wallin, John E.W.	'Home Conditions and Personal and Family History, C. H Stoelting Co., Chicago, Illinois, 1914.	Environmental and Heredity Record Form.	Children up to 20 years.	For recording home conditions and personal and family history.	The blank consisst of three sections, namely : home and environmental conditions, child's developmental history, and hereditary factors.
Williams, J. Haro'd	'Whittier Scale for Granding Home Conditions, California Bureau of Juvenile research Whitties California, 1918,	Environment Scale	Any home containing minor children.	For measuring the social adequacy of any home containing minor children.	Five factors are considered in the scale : (1) necessities, (2) neatness, (3) size, (4) parental supervision.
Williams, J. Harold	"Whittier Home Rating Scale, Whittier State School, Whittier, Californis, 1916.	Envionment Scale	All levels	To study the cultural and economic level of the home.	Contains a score card with directions for grading each of the five different items : necessities, neatness, size of home parental conditions, and parental supervision.

Having studied the various characteristics of pupils as a group, the teacher is in better position to study individual pupils within his particular group. While special attention should be given to this phase of the teacher's activity early in his experience with his group, it involves continuing attention so long as teacher and pupil are associated together in the school. Items of special importance in studying the individual pupil may be classed under the physical, mental, and social characteristics of the pupils. Many subdivisions of these areas and many ways of gaining the desired information have been proposed. One curriculum bulletin states that adequate knowledge of all the following factors is necessary in order to understand the needs of pupils:

1. Physical condition of child.
2. His chronological age.
3. His home environment.
4. His previous training,
5. Nationality and language difficulties of child.
6. Social attitudes and habits of child.
7. Work attitudes and habits.
8. His emotional development.
9. His characteristic interests.
10. His special abilities.
11. His mental age
12. His intelligence quotient.

This bulletin adds that "it is important that a study of the child be made from the very beginning of his first school year, and that the record of this study be supplemented during each year of his life in school with all the relevant facts which can be accumulated. Only by access to such complete records may teachers hope to form accurate judgments of children's needs.

To gain such information the teacher should interview the pupil, the parents, the former teacher, the puplic health nurse, the school nurse, the physician, the principal, and the truant officer. He should administer diagnostic tests, study the pupil's record, observe the pupil in various situations, secure estimates of other pupils, and visit the pupil's home. Activities involved in conducting interviews and in administering and interpreting various instruments of diagnosis merit special consideration.

CONDUCTING INTERVIEWS

Conducting an interview is a highly important activity of the teacher and involves a number of rather definite procedures. While the nature of the person to be interviewed and the purpose of the interview call for variations in procedure, a number of general helps have been suggested. Bingham and Moore present a comprehensive list of suggestions for "intelligent direction and control of interviews." The following items selected from this list should prove helpful to teachers in planning and conducting interviews:

A. General Suggestions:

1. Use interviews discriminatingly.
2. Use interviews to obtain opportunity for observation.
3. Use interviews to determine opinions, attitudes, or trends of belief.
4. Avoid use of the interview for compiling data of uncertain value.
5. Avoid use of the interview for getting general information or common facts.

B. Preparing for the Interview:

6. Formulate your problem.
7. Prepare a schedule or list of questions.
8. Know your field.
9. Know your interviewee.
10. Provide for privacy.
11. Practice taking the interviewee's point of view.

C. Interviewing:

12. Gain and deserve the interviewee's confidence.
13. Establish pleasant associations.
14. Render your interviewee a real service.
15. Help the interviewee to feel at ease and ready to talk.
16. Do not ask questions directly until you think the interviewee is ready to give the desired information and to give it accurately.
17. Listen.
18. Let the interviewee tell his story; then help him to supplement it.
19. Keep on the subject.
20. Be straightforward and frank rather than shrewd or. clever.
21. Avoid the role of teacher.
22. Take pains to phrase your questions so that they are easily understood.
23. Avoid implying the answer to your own question.
24. Avoid impertinence.
25. Give the interviewee opportunity to qualify his answers.
26. Check answers whenever possible.
27. Record all data at once, or at the very earliest opportunity.
28. Practice separating facts from inferences.
29. Allow time enough.
30. Do not dawdle.
31. Keep control of the interview.

ADMINISTERING AND INTERPRETING INSTRUMENTS OF DIAGNOSIS

Gathering information about pupils has been facilitated in recent years by the development of quantitative means of obtaining information concerning intelligence, interests,attitudes, behavior, adjustment, and physical condition. The validity of such means of securing information is often questionable, but when used discreetly they provide valuable assistance to the teacher in studying the individual pupil. These devices for gathering information about pupils should not only be helpful to teachers in studying the pupil; but should also be suggestive of ways of devising their own means of securing valuable information.

A summary of representative tests. rating scales, and questionnaires that have been developed for the purpose of studying various phases of the individual pupil is presented in Tables 2, 3, and 4. In addition to such instruments for studying the pupils, numerous less formal procedures have been suggested. For example, illustrative informal procedures for studying pupil interests

In order that information about the pupils may be used effectively it should be recorded as gathered. As previously stated regarding environmental data, this record should be made cumulative. General cumulative records or inventory sheets applicable to the peculiar needs of a given school should be devised. The following example illustrates the type of inventory sheets developed in one school system :

GENERAL CUMULATIVE INVENTORY

Interests of Children

(Record as observed)

Attitudes, Abilities, and Needs

Attitudes (Record as observed)	Habits (Record as observed)	Needs (Record as observed)	Check in This Column Needs Met

Table 2

Instruments for Measuring Factors of Personality

Author	*Source*	*Type*	*Designed for*	*Purpose of the Test*	*Content of the Test*
1	*2*	*3*	*4*	*5*	*6*
Allport, F.H.	"North Caroling Ratinga Scale for Fundamental Traits," C.H. Stoelting Co., Chicago, 1924.	Rating Scale	Any age group	To rate persons on twenty four traits,	Consists of 24 paired statements expressing the extremes of a given trait. A nine-point scale is provided for the use of the rater.
American Council on Education	"Personality Rating Scale." American Council on Education, 744 Jackson Place, Washington, D.C. 1928.	Rating Scale	College freshmen.	To rate students on five traits.	Consists of five traits to be rated on a graphic scale. The five traits are appearance and manner, industry, ability to control others, emotional control, and distribution of time and energy.

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*
Brown. Edwin J.	"Character-Conduct Self-Rating Scale for Students," Bureau of Educational Measurements, Kansas State Teachers College, Emporia. Kan, 1931.	Rating Scale	Elementary and junior high school.	To be used by pupils as an instrument of self-analysis.	The test consists of ten sections : (1) fidelity. (2) obedience, (3) insight, (4) caurtesy, (5) co-operation, (6) industry, (7) fair Play, (3) good healty, (9) self-control, (10) sernice.
Chassell, Laura M, Upton, Siegfried M. ; and Chassell, Clara F.	"Short Scales for Measuring Habits of Good Citizenship, Bureau of Publications, Teachers College, Columbia University, New York, 1922.	Rating Scale	Elementary and high school.	To measure habits of good citizenship	There are eight scales of 24 items each. Each item is weighted and is rated on a scale from 0 to 3.
Clark, Willis W.	"Whittier for Grading Juvenile Offenses, California Bureau of Juvenile Research,	Rating Scale	Elementary and high school.	To evaluate the seriousness of juvenile offenses.	One hOndred and twenty-two statements classified under 14 headings have been scaled from 1 to 7 according to their social

	Whittier, Cal, 1922.				consequences from the least serious to most serious.
Cornell, Ethel L.; Core, W. W.; and Orleans.	"New York Rating Scale for School Habits, World Book Co. Yonkers, N. Y., 1927.	Rating Scale	Third Grade through high school.	To obtain ratings on school habits and attitudes which are important outcomes of education.	Consists of nine qualities on a graphic rating scale with a brief phrase at each end and in the middle of the scale.
Hacker, L. W.	"A Charater Scale, McKnight and McKnight, Normal, III.	Rating Scale	Elementary and high school	To rate the character traits of school	The scale consists of 40 items grouped in six sections; physical, intellectual, working, personal, social, and emotional character.
Haggerty, M.L.; Olson. W.C.; and Wickman, E.K.	"Behavior Rating Schedules," World Book Co.. Yonkers, N.Y., 1930.	Rating Scale	Elementary school children	To measure problem tendencies in children.	Consists of two forms, the first consisting of 15 behavior problems and the second consisting of 35 graphic ratings of ratings of mental, physical, social, and emotional aspects ofcharacter.

(*Contd.*)

1	*2*	*3*	*4*	*5*	6
Hayes, Margaret L.	"A Scale for Evaluating the School Behavior of Children Ten to Fiften," Psychological Corporation, 522 Fifth Ave. New York, 1933.	Rating Scale	Children 10 to 15	To show the habit patterns of adolescents in terms of desirable and undesirable personality development,	One hundred habit patterns are listed to be checked as true, false, or uncertain. Ratings, are given on items grouped into eight sections.
O'Reilly, F. L.; Doughtery, B. L.; and Mannix, Mary E.	"Character Analysis Chart," Public School Publishing Co., Bloomington, Ill., 1931.	Rating Scale	Elementary and high school.	To stimulate pupils to examine or analyze their own character.	Ten traits are to be rated, namely; health, honesty, loyalty, cheerfulness, courtesy, cooperation, moral courage, industry. self-control and leadership.
Watson, Goodwin B.	"Rating Scales, The Association Press, 347 Madison Ave., New York, 1928.	Rating Scale	Elementary and high school	To be used for rating various phases of character.	Farm B is a behavior rating scale; Form F is a fundamentals of character scale; Form S is a situation scale; and Form T is a trait rating scale.

Yepsen, Lloyd M.	"Adjustment Some Card," Extension Department, The Training School, Vineland, N.J., 1928.	Rating Scale	Children all ages.	To obtain a measure of a child's social adjustment.	Seventy items grouped into 14 categories, each dealing with some phase of the adjustment of the individual to his environment.
Allport, G. W. and Allport, F.H.	"A Scale for Measuring Ascendance-Submission in Personality, Houghton Mifflin Co., Boston, 1928,	Personality Adjustment	Adult men, adult women.	To "discover the disposition of an individual to ddminated by them) in various face-to-face relationships of every-day life."	Consists of situations or problems with from two to five alternative responses give. Some situations appear in a form for women, others appear on forms for both men and women.
Bernreuter, R.G,	"Personality Inventory," Stanford University Press, Stanford, Cal., 1931.	Personality Inventory Questionnaire.	High school and college students, also adult-,	To measure neurotic tendencies, self-sufficiency, introversion-extrdversion, and dominance-submission.	Includes 125 questions taken from Allport, Thurston, and others : and rate ; by yes, no, and ?
Chassell. J.O.	"Experience Variables" Record," by	Personality Adjustment	Adults	To provide a systematic survey of	Consists of twelve sections. Within each section questions

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*
	author, University of Rochester Medical School, Rochester, N. Y., 1928.	Questionnaire		an individual's attitudes toward his family, sex and religious standards social and emotional adjustments, intellectual and vocational interests and aptitudes.	are classified into four groups, in accordance with the kind of behavior investigated.
Furiey, Paul H.	"Developmental Age Test, C.H. Stoclting Co., Chicago, 1930.	Personality Adjustment Questionnaire.	Children 7 to 17.	To study the changing volitional life of the growing child.	Six sub-tests containing 196 items on things to do ; things to be when grown up ; books to read : things to have, see, and think about.
Mathews, Ellen	"Revision of the Woodworth Personal Data Sheet," C.H. Stoelting Co., Chicago, 1923.	Personality Adjustment Questionnaire.	Children 8 and above.	To measure the emotional stability of children.	Form A contains 60 questions ; Form B ; 40 questions. Each question is followed by yes and no. The two forms were later combined into a single form of 75 items.

Morris, Elisabeth H.	"Trait Index L., Public School publishing Co., Bloomington, III. 1929.	Personality Adjustment Questionnaire.	High school graduates.	To test for qualities of leadership.	Consists of 137 items arranged in six divisions. Presents typical situations to secure the general trend of an individual's reactions.
Pressey, S.L.	"X-O Tests for Investicaling the Emotions," C.H. Stoelting Co., Chicago, 1920.	Personality Adjustment Questionnaire.	Adults and children.	To find individual difference in moral emotional, and effective tendencies.	The test consists of four subtests each containing 25 sets of five words each.
Symonds, P.M.	"Adjustment Questionnaire," Psycholonical Corporation, 522 Fifth Ave., New York, 1934.	Personality Adjustment Questionnaire.	Grades 9 and 10.	To measure pupil adjustment.	Pupils express their likes and dislikes of 150 items arranged into seven categories.
Thurstone, L.L. and Thurstone, T.G.	"Personality Schedule," University of Chicago Press, Chicago, 1929.	Personality Adjustment Questionnaire.	Adults, college students	To detect personal and social maladjustments.	Consists of 223 questions followed by yes, no, and ?, the last meaning not sure or undecided.

(Contd.)

1	2	3	4	5	6
Watson, Goodwin, B.	"Self-Estimate of Happiness," The Association Press 347 Madison Ave. New York. 1931.	Personality Adjustment Questionnaire.	High school and college.	Designed to give a measure of peronal happiness.	Two graphic rating scales are used to get a self-estimate of general happiness and variability of mood.
Woodworth, R.S.	"Persdnal Data Sheet," C.H. Stoelting Co., Chicago, 1917.	Personality Adjustment Questionnaire.	Adults	To estimate an individual's psychoneurotic tendencies.	Consists of 116 questions to be answered by yes and no. Examples are ; Were you shy with other boys ? Do you feel tired most of the time ? Do your interests change quickly ?
Willoughby. R.R.	"Emotional Maturity Scale," Stanford University Press, Stanford, Cal. 1931.	Personality Adjustment Questionnaire	College students and adults.	To estimate emotional maturity as shown by a subject's willingness to accept responsibi. lity, etc.	Sixty items, "each of which describes in terms of a hypothetical subject (S) a type of situation and a reaction to it."
Downey, June	"Group Will-Temperament	Personality Test	Children and adults	To evaluate certain temperamental traits	Consists of twelve tests arranged in three groups of four tests each.

	Test, World Book Co., Yonkers, N.Y., 1922			in individuals through a study of simple motor reactions.	Subject marks one of a series of pairs of contrasted adjectives that best describes himself, practices copying a model, writes with eyes closed, etc.
Kohs, B.C.	"Ethical Discrimination Test," C.H. Stoelting Co., Chicago, 1922.	Personality Test	Children, adolescents, and adults.	To measure knowledge of ethical and moral principles.	Contains six divisions as follows : social relations, moral judgment. proverbs, definition of moral terms, offense evaluation, and moral problems.

TEACHER ACTIVITIES THAT HAVE TO DO WITH THE LIMITATIONS OF THE CURRICULUM

In planning procedures for directing the activities of pupils, the teacher is confronted by a number of conditions which definitely limit the manner in which the curriculum is to be developed. An important task for the teacher is to discover the character and extent of such limitations, and to provide for planning and carrying on activities in such a manner as will tend to reduce to a minimum the undesirable effects of such limitations. Limiting factors commonly found in school programs are usually due to the manner in which the curriculum is organized, or to external causes. Among such limiting factors are:

Rigid prescription of textbooks
Scope of work for grade
Rigid time allotment
Promotion and grading
Material equipment
Non-teaching duties expected of teachers
Extra school duties expected of teachers
Program of studies required
Rules and regulations of the school system
Prescription of use of the course of study
Character of supervision
Disciplinary requirements in the school.

Upon careful investigation the teacher often finds that what he has considered a limiting factor does not really operate to limit his work. For example, one of the common excuses offered by teachers for carrying on a narrow uninteresting program of work is that the adopted textbooks must be taught.

Table 3

InsTruments for Measuring Factors of Interest

Author	*Source*	*Type*	*Designed for*	*Purpose of the Test*	*Content of the Test*
1	*2*	*3*	*4*	*5*	*6*
Freyd, Max	"Occupational Interest Blank," C.H, Stoelting Co., Chicago, 1922.	Interest Questionnaire.	Men and women	To measure occupational interest.	Contains a list of 80 occupations opposite each of which are five symbols rating the attitude of the subject toward the occupation.
Freyd, Max	"Minnesoda Interest Analysis, Marietta Apparatus Co., Marietta, O., 1928.	Interest Questionnaire	Junior high school	To determine the interest that accompanies mechanical ability.	One part consists of 115 items about occupations, another consists of 73 items on activities and school subjects.

(*Contd.*)

1	2	3	4	5	6
Garretson, O.K. and Symonds' P.M.	"Interest Questionnaire for High-school Students, Bureau of Publications, Teachers College, Columbia University, New York, 1930.	Interest Questionnaire	High school boys	To measure the inclinations of pupils entering high school toward the academic, commercial, and technical curricula.	Consists of eight tests dealing with occupations, sports, student school activities, school subjects, things desired, magazines read, etc.
Hepner, Harry W.	"Vocational Interest Quotient Booklet," Psychological Corporation, 522 Fifth Ave. New York, 1931.	Interest Questionnaire	Ages 15 or above	To determine the agreement of an individual's interest preferences with those of other occupations.	One hundred and sixty-seven items are to be marked by L, J, or D, indicating a liking for, an indifferenee, or a dislike for the occupation.
Lehman, H.C.	"Play Qutz. "The Association Press, 347 Madison Ave. New York, 1926.	Interest Questionnaire	Agee 8 to 22	A check list for discovering a pupil's interests.	The questionnaire lists 200 play activities, Pupils are asked to check the activities they have engaged in the previous week.

Lehman, H.C.	"Vocational Attitude Quiz,' School of Education, University of Kansas, Lawrence, Kan 1925.	Interest Questionnaire	Ages 8 to 18	To study the persistence of vocational interests.	Seven groups of occupations are given, such as occupations best for moneymaking those most likely to be followed those liked best, and those liked least.
Manson, Grace E.	"Occupational Interest Blank for Women," School of Business Administration, University of Michigan, Ann Arbor, Mich., 1931.	Interest Questionnaire	Women	To determine whether a given woman's interests serve to identify her with a well-defined occupational group.	The test consists of 160 occupations open to women arranged alphabetically. Symbols are provided to determine the drgree of liking or dislike for the occupations.
Miner, James B.	"Analysis of Work Interest Blank," C.H. Stoelting Co., Chicago 1922.	Interest Questionnaire	High school	To aid finding special interests and abilities that are related to different type of work.	Consists of 28 paired items representing divergent interests. Provides also a record for various social and vocational interests.
Stewart, Frances J. and Brainard, Paul	"Specific Interest Inventory," Form W. Psychological Corporation, 522 Fifth Ave., New York, 1932.	Interest Questionnaire	Boys, girls, men, and women.	To aid in the discovery and analysis of interests, with a view toward vocational guidance.	Contains 20 groups of questions and an inventory of likes and dislikes.

1	*2*	*3*	*4*	*5*	*6*
Strong, E.K.	"Vocational Interest Blank,' Stanford University Press, Stanford, Cal., 1927.	Interest Questionaire	High school and adults.	To discover whether an individual's interests are closely identified with those of some well-defined occupational group.	Contains eight parts, five of which deal with occupations, amusements, school subjects, activities, and peculiairties of people ; and three parts dealing, with preferences for various activities as typified by well-known men, comparisons of interests.
Terman, Lewis M.	"Plays, Games, and Amusements Test," Stanford University Gifted Child Research. Stanford University, Stanford, Cal. 1921.	Interest Questionnaire	Children	To discover children's play interests, their play activities and their knowledge of play.	Parts, I, II, and III consist of a list of games to be checked. Part IV is a list of 45 questions to determine whether the child has participated in certain play activities. Parts V. VI, and VII contain information about play and and games.

Benge, E.J.	"Stemogauge Test Stenogauge Company, Phisdelphin, 1923.	Vacational Aptitude	All ages	To measure aptitude for stenography.	Contain four parts, namely ; dictation, transcription rate, transcription accuracy, and spelling.
Elwell, F.H. and Fowlkes, J.G.	"Bookkeeping Test, World Book Co., Yonkers, N.Y., 1928.	Vocational Aptitude	High School	To measure achievement in bookkeeping in high schools and business colleges.	Consists of two forms, each of which is divided into five divisions; goneral theory, journalising, classification, adjusting entries and closing the ledger, and statements.
Engle, Edna M. and Stenquist, John I.	"Home Economics Test," World Book Co., Yonkers, N. Y. 1931.	Vocational Knowledge	Grades 5 to 10	To measure pupil's knowledge in various fields of home economics.	Three separate tests are included in the complete test (1) Food and Cookery, (2) Clothing and Textiles and (3) Household managament
Profer, Phosses D. and Care, Warres, W.	Clothing Tests, pupils School Publishing Co., Bloomington, 19, 1929.	Vocational Knowledge	High school girls	To measure the knowledge girls have concerning the quality of clothing.	The test contains five. parts; fundamentals of construc : care, and repair of clothing, hygiene of clothing appropriateness of clothing, and economics of clothing..

(*Contd.*)

1	2	3	4	5	6
Thurston, L.L.	"Examination in Clerical Work, World Book Co., Yonkers, N.Y., 1922.	Vocational aptitude	Clerks of all types	To measure aptitude for clerical and general office work.	This is a group test consisting of eight sub-tests as follows : (1) checking arithmetic errors, (2) locating misspelled words, (3) cancellations, (4) code learning, (5) alphabetising. (6) directions, (7) arithmetic problems, and (8) matching proverbs.
Thurstone, L.L.	"Vocational Guidance Tests for Engineers," World Book Co,, Yonkers, N.Y., 1922.	Vocational Guidance or Aptitude	High school and college freshmen.	To determine probable success in an engineering course.	Consists of five tests, one in each of the following subjects ; arithmetic, algebra, geometry, and physics. The fifth part contains 100 questions on technical information.

While, in order to comply with state laws, this is frequently true, the limitation implied does not often exist in aggravated form. In other words, while the teacher must use the adopted texts, he is usually free to go as far beyond the text as his inclination and ability may dictate, Similarly, other limiting factors may exist only for the teacher who is not resourceful and energetic.

In any case, however, all possible limitations should be canvassed, since awareness of limitations is necessary if the teacher is to plan and engage in a course of action effectively. The teacher may find the following suggested activities helpful: reading carefully the course of study and the rules and regulations of the school system; familiarizing oneself with the teaching schedules; examining textbooks, prescribed or recommended; checking the library carefully for available materials; making an inventory of the physical equipment available; and discovering the general program of supervision.

TEACHER ACTIVITIES THAT HAVE TO DO WITH THE DIRECTION OF PUPIL ACTIVITIES

Teacher activities considered up to this point are, in a sense, preliminary to the main task, the immediate direction of the activities of pupils. However, they are none the less important. Moreover, we should not assume that the preceding consideration of the various types of activities necessarily indicates a rigid sequence to be followed. As has been previously stated, the appropriate time for engaging in a given activity will be determined by the method of organizing instruction and the particular situation in which the teacher finds himself.

The procedures to be followed by the teacher in directing pupil activities will be dictated by the nature of the activities engaged in by the pupils. In Chapter 9 it has been pointed out that there is a wide variety of possible pupil activities involving many situations that may be utilized. Regardless of

Table 4
Instruments for Measuring Factors of Attitudes

Author	*Source*	*Type*	*Designed*	*Purpose of the Test*	*Content of the Test*
1	*2*	*3*	*4*	*5*	*6*
Burdick, Edith	"Apperception Test. Association Press, 347 Madison Ave., New York, 1927.	Attitude Questionnaire	Elementary school children	To measure the cultural background and social status of the child in light of his attitudes and connections.	One scale contains eleven sections to be answered by the child as a group. Another scale of five sections to be answered by the child at home deals with his knowledge of social usage, things liked and disliked, play activities, books read, etc.
Case, Adelaide T. and Limbert, Paul M.	"Around the World, Association Press, 347 Madison Ave., New York, 1932.	Attitude Questionniate	Grades 6 to 10	To discover how young people feel concerning certain international problems.	One part is a yes-no test of opinion, another concerns information about great leaders, and a third is a multiple choice test on "What do you think about it ?"

Hart, Hornell	"Test for Social Attitudes and Interest, University of Iowa, Iowa City, Ia., 1923.	Attitude Questionnaire	Adults and children over 12	To indicate predominant attitudes toward a number of social and economic situations and to show likes and dislikes toward a variety of activities.	Chart 1 is a practice list; Chart II gives four liste of activities; emotional, social, religious, and economic, for which a preference or lack of it is to be expressed ; Chart III contains two lists of economic and social reforms upon which the subject expresses an opinion.
Hill, Howard C.	"Test of Civic Information and Attitudes, Public School Publishing Co., Bloomingto, III, 1926.	Attitude Ques tionnaire	·Grades 6 to 12	To test information and attitudes.	Consists of a series of multiple choice questions concerning civic information and civic attitudes.
Lewerens, Alfred S.	"Orientation Teet, Southern California Book Depository, Hollpwood Cal., 1931.	Attitude Questionnaire	High school and college students and adults.	To measure beliefs in a number of fields.	Consists of nine division with from 25 to 75 items in each division. The seven cardinal objectives form the basis of the divisions.

(*Contd.*)

1	*2*	*3*	*4*	*5*	*6*
Newman, G.B.; Kulp, D. H.; and Davidson, Helen	"Test of International Attitudes,' Bureau of Publications, Teachers College, Columbia University, New York, 1926.	Attitude Questionnaire	Young people and adults.	To discover internutional and interacial attitudes.	A test of four sections dealing with attitudes toward international questions, beliefs. and convictions regarding other races and nations.
Thurstone, L.L. Editor	"The Measurement of Social Attitudes, University of Chicago, Press, Chicago, 1929-1934.	Attitude Questionnaire and Tests.	High school, college students. and adults.	To measure individual or group attitudes toward certain social institutions.	A series of 35 scales. each containing approximately 20 statements. The scales are designed to measure attitudes toward such things as divorce, war, foreign missions, public office, free trade patriotism, free speech, etc.
Watson, Goodwin B., com-	"A Test of Public Opinion, Bureau of Publications,	Attitude Questionnaire	High school seniors and adults.	To show the extent and strength of an individual's prejudices as	Contains six parts concerned with opinions upon social, religious and econo-

piler	Teachers College, Columbia University, New, York 1923.			exhibited in extreme opinions upon moral, religious, and economic questions.	mic questions ; the certainty of opinions in these same fields ; the extent to which the subject is willing to commit himself on most questions ; and the subject's willingness to generalize his opinions upon controversial issues
Watson, Goodwin B., compiler	"Opinions on Internnational Questions, The Association Press, 347 Madison Ave., New York.	Attitude Questionnaire	High school college, or adults.	To measure attitudes on international questions.	The test consists of 100 statements covering disputed issues such as, war, imperialism, true partriotism, international dangers, public opinion, and immigration.
Watson. Goodwin B.	"Opinions on Race Relations.' The Association Press, 347 Madison Ave., New York.	Attitude Questionnaire	High school students and adults.	To obtain a measure of liberalism towards questions of race relations.	A questionaire of 35 items from the white Gentile point of view. Arranged so that a prejudice score may be obtained.

the particular method of organizing instruction that may be in use in a given school or school system; many of these pupil activities will appear, and the procedures for directing them will be essentially the same. A list of such activities has been included in a state course of study as follows:

Making books
Publishing periodicals
Exhibiting
Developing a school museum
Arranging a bulletin board
Making decorative maps and wall hangings
Making posters
Diagramming and charting
Making graphs
Modeling
Making plaster of Paris plaques and molds
Constructing
Making friezes
Making motion and talking pictures
Constructing peep shows and miniature scenes
Giving shadow plays, puppet shows, and marionette performances
Dramatizing
Developing hobbies
Conducting clubs
Developing programs
Playing
Making surveys
Taking excursions or field trips
Beautifying home and school environment

In order that teachers may have guidance in directing these activities, the course of study referred to has included a section on general teaching procedures which includes suggested procedures for directing each type of activity. For example, making posters is an activity engaged in quite generally by pupil at various grade levels. Through experience successful teachers have discovered satisfactory ways of directing pupils engaged in this type of activity. The procedures developed from these experiences have been tested and revised and have been made available to other teachers for their guidance in the following form:

Activity: Making posters

> *Suggested Procedure*: A poster is a means of presenting one idea in a clear and convincing manner. It should be arranged so that it will attract the attention of a disinterested person, and be clear in its message. The poster should not be crowded with many illustrations and much lettering, but the whole effect should be clear and to the point.
>
> Illustrations for a poster may be free-hand drawings or representations cut or torn from colored paper. Letters may be drawn on the poster or cut from paper and pasted thereon. They should harmonize in color with the illustration. Strong contrasts should be used, the amount of light and dark balancing in the lettering and illustrations. Before beginning work on the poster paper, margins should be placed on newsprint or wrapping paper the size of the poster desired. In measuring for margins, the top and sides of the poster should be equal while the bottom margin should be slightly wider than these. Strips of paper representing the words, or small blocks of paper the size of letters, should be arranged on newsprint or wrapping paper. The position should be changed until the best effect is discovered. The whole should form a rectangle.

When blocking in the letters the space between the lines should be less than the height of the letters; the space between words should equal the width of the letters; and space between the letters should appear equal. Straight up and down stroks in lettering, careful spacing of horizontal lines, and correct spacing of letters, words, lines, and margins are important points to be observed. Careful measurements for accurate subdivisions of spaces are necessary in poster making.

Such activities as presenting plays, conducting exhibits and reviewing books present numerous opportunities for the use of effective posters.

References:

Mathias, *Art in the Elementary School*, Scribner.

Lemos, *Modern Art Portfolio no Posters*, Davis Press.

TEACHING PROCEDURES AND CURRICULUM DEVELOPMENT

One of the most important phases of a curriculum program is that of providing suggestions to teachers for directing pupil activities, providing suitable means for reporting concisely procedures that have been followed in a given situation, and for presenting them in such form as may be suggestive to other teachers in planning their work. Procedures developed along the lines here indicated call for the inclusion in courses of study of procedures somewhat different from the usual practice.

Just as there must be offered a variety of materials that may be helpful to the teacher in planning and organizing a series of activities, so there must be suggested procedures from which to choose.

Thus the course of study, instead of designating a specific activity to be engaged in and a specific procedure to be followed provides a number of suggested possible activities and descriptions of procedures which have been found suitable by teachers who have directed similar activities. This is consistent with the point of view that the course of study is a source of raw materials to which the teacher can go for assistance in developing the curriculum. The suggested teaching procedures should be classified and indexed so that the teacher will be able to find them readily.

In this way programs of curriculum making may contribute significantly to the improvement of teaching procedures. The critical appraisal required by the individual teacher of his own procedures, and the opportunity to become acquainted with procedures found effective by other teachers provide the basis for this improvement.

12

Evaluating the Outcomes of Instruction

Attention to evaluation of the outcomes of instruction has been a characteristic of education in every epoch. The necessity of checking the results accomplished against the work undertaken has usually been accepted as a matter of course. Probably no more definite index to the philosophy of a given educational program can be found than that shown in the means used for evaluation. The procedures followed, the purposes and functions implied, the interpretation and use of the results obtained, all reflect the general point of view upon which a curriculum is developed. Practices in evaluationary from that of the direct and exact imitation characteristic of oriental systems of education, to the highly specialized techniques of the modern objective testing movement, or to the less formal type of evaluation based upon observation of conduct.

THE NATURE OF OUTCOMES

The term outcome is interpreted in a variety of ways. During recent years it has been frequently construed as synonymous with aim or objective.

Thus, in certain courses of study specific aims are stated; specific procedures for achieving these aims are indirected; and specific outcomes, identical with the aims or practically so, are listed. This use of the term is confusing since outcomes thus set up in advance become merely more specific statements of the aims. This confusion may be clearly seen in courses of study which employ the term outcome in the sense here indicated. Frequently they contain the statement that the outcomes are the teaching ends which the pupils actually reach, rather than those they are expected to reach, thus indicating that they cannot be determined in advance.

However, in suggesting procedures for organizing instruction they imply the necessity of stating the outcomes definitely in advance. As a rule, this use of outcomes in courses of study consists of the translation of the stated aims into specific knowledge and skills to be acquired by the pupils. For example, an aim is stated: "To know how to use chisels," and the correlative desirable outcome, "Ability to use chisels properly."

A general concept of outcome, implied in the example referred to and often reflected in educational literature and in practice, is that the outcome is a specific isolated aspect of behavior. This concept doubtless has been stimulated by the scientific movement in education.

It has resulted in the minute analysis of human conduct and of ideals for the purpose of stating aims or objectives. It has lent itself to the objective means of evaluating the results of instruction. It has encouraged, if not demanded, uniformity of materials and procedures. It lends itself to a simplicity and directness of procedure that may easily be reduced to a formula. This concept, however, places an undue restriction upon evaluation as a function of the educative process.

Another concept of outcomes is that they are the result—not necessarily the result desired or expected—but the actual result as represented in the changes brought about in the behavior of pupils. Ideally, the outcomes of instruction should be in accord with or should approximate the aims of education. The means of identifying and of evaluating them should, therefore, be in accord with the nature of the aims and the manner in which they function. The aims of education, involve more than specific items of knowldge to be learned and skills to be acquired.

Since, as previously stated, the activities engaged in by pupils do not result in precisely the outcomes anticipated, constant modification and reinterpretation of the various elements of the educative process are required as progress is made toward the realization of aims. If, instead of representing merely specific abilities to be acquired, aims are conceived as a means of giving direction to the educative process, then outcomes observed in a given situation should reflect the extent and the direction in which a given experience or series of experiences has led the individual taught. Any evaluation of observed outcomes, therefore, must be in terms of the aims. In other words, evaluation does not consist merely in checking a completed process but in continuously appraising progress in the direction indicated by the accepted aims.

The aims of education as stated in terms of generalized controls of conduct form the basis for the concept of the function of evalution in the curriculum. The composition of generalized controls of conduct as specific habits and motor skills, knowledge, and attitudes and appreciations. Although these are designated as components of generalized controls of conduct, as previously stated, it is impossible in actual experience for one of these elements of conduct to be present without the others.

Moreover, there seem to be no generalizations and principles that are absolutely essential for particular controls of conduct. This implies that there are no specifics that will determine whether a given control of conduct has been satisfactorily developed. Just as it is important to know the characteristics of the generalizations and abilities largely involving specific habits at various stages of growth, so it is necessary in evaluating outcomes to employ varying interpretations of standards appropriate to the particular stage of growth.

Therefore, progress toward the achievement of these standards cannot always be stated in quantitative terms. It will vary in degree and in kind with different individuals and in different situations. In the case of the specific habits, motor skills, and knowledge requiste to a desired generalized control of conduct, however, evaluation consists in applying such measures as will determine whether the desired response is habitually given, or the extent to which the desired habit has been acquired. Such measures serve to indicate also what additional application may be necessary in order to bring achievement up to an accepted standard.

EVALUATION A FUNCTION OF THE CURRICULUM

Such a concept of outcomes requires that evaluation not be considered as a procedure separate from the curriculum, introduced from time to time to perform a specific function; nor even as a step in developing the curriculum if by that we mean that it appears in a rigid sequence of procedures in the learning process. Instead, it is a function of the curriculum, interacting with each element of it at all points. Thus considered, evaluation occurs continuously as the curriculum develops and is concerned with every aspect of it. There are, however, three important aspects of a program of evaluation that require-special attention:

1. It should provide pupils the means of evaluating their own activities;
2. it should provide the teacher a basis for planning the activities of pupils and for continuous evaluation of the results; and
3. it should provide a basis for constant revision of the curriculum.

As the pupil undergoes an experience he is constantly evaluating that experience in terms of his own purposes. The various elements that go to make up the experience are subordinated to the experience itself, although a given element may be in the focus of his interest at a given time. The relationship to his dominating purpose, however, is constantly before him. He plans and engages in a series of activities to achieve his purpose, and revises and improves his plan of action from time to time as his own evaluation of progress toward the achievement of his purpose may dictate.

This constant process of evaluation develops an awareness of his need for more adequate mastery of certain abilities and thus brings about the inclusion of steps to secure such mastery in his plan of action. As a course of action matures or comes to a conclusion evaluation includes a view of the enterprise as a whole in the light of the pupil's purpose. It should result in the consideration of improvements that might have been made and shoutd stimulate interest that may result in purposeful activity in some other related enterprise.

Similarly, the teacher directing the activities of a group of pupils should be constantly evaluating in terms of his own purpose as it is dictated by the aims of education, the progress that is being made toward the achievement of that purpose. By what ever means may be at hand, the teacher determines whether suitable progress is being made in a desired direction and continues a givsn course of action or modifies it accordingly.

Thus, if the outcomes at any step in the progress of a series of learning activities indicate that changes should be made, the program should be so flexible that changes can be made without apparent abruptness. This may operate in a number of directions. For example, a teacher may plan a series of activities extending over a period of time during which he believes the desired results may be achieved.

However, if for any reason the interest of the group cannot be normally sustained for that time, the program should be changed. If, on the other hand, the purposes of a given series of activities have not been achieved when the allotted time has been spent, the time should be extended. This calls for constant appraisal by the teacher of pupil purpose, of the activities engaged in by teacher and pupils, of the materials used, and of the evaluations that pupils make of their own experiences.

Similarly, evaluation as a function of the curriculum provides a check upon the aims, the selection and organization of materials, the teaching procedures, and the means of evaluation itself. In other words, the revision of the curriculum takes place properly through constant evaluation of its various elements as they are observed in action.

PROVISION FOR EVALUATION IN COURSES OF STUDY

According to this point of view courses of study for the use of teachers in developing the curriculum should provide suggestions that will assist them in the various phases of evaluation. Many courses of study contain provisions for assisting teachers in evaluating the results of their instruction. These usually consist of suggested procedures for adminstrating standard tests or for constructing and applying tests developed in a given curriculum program.

Objective tests and examinations have been used more widely than any other means for evaluating the results of instruction. This may be due, to a large extent, to the ease with which they are administered and scored, and to the uniformity with which the results may be treated.

Therefore, this method of evaluation is either stated or implied in a majority of courses of study. In some instances tests are included in the course study. When included they are usually given for illustration, although in some cases they are suggested or even prescribed for actual use. The inclusion of tests in courses of study is a relatively new element that has been introduced into course of study making. Harap found in his analysis of courses of study in 1930 that only 8 per cent of the courses examined included tests. A similar analysis by Harap and Bayne in 1932 showed that 18 per cent included tests.

Although the results of these studies show an increase of only 10 per cent for the two year period, they indicate an increasing emphasis upon provison in courses of study for some means of evaluation.

As a rule, the tests included in courses of study an designed for testing specific habits and knowledge. The tests usually found may be classed as, completion, direct recall, multiple choice, true-false, reason, enumeration question, thought question, classification or association, multiple choice-recall-recognition, and matching. While most courses of study state the certain attitudes, appreciations, and dispositions are desirable outcomes, the testing procedures usually included provide no means for evaluating them. There is little doubt, however, that the use of objective tests has improved the evaluation of those educational results concerned with specific knowledge and skills. However, two outstanding defects of such tests as commonly used should be noted.

The first of these defects is there doubtful validity. Tyler observes that "in general, it may be said that valid and reliable tests of these types (objective achievement) are much more difficult to construct than is commonly realized." The tests usually call for specific information in a given field, and are so constructed that they test the pupils' knowledge of the specific items included.

However, we have no assurance that knowledge of specific facts in a given field is a valid measure of pupil growth or of the ability to use the knowledge in its proper relationship. In a recent investigation to determine the relation between the ability to secure facts and the ability to do inferential thinking regarding the material read, Joseph C. Dewey concludes that "we can no longer assume that, by making actual tests of reading, we have at the same ttme measured true understanding of what is read."

Even when aims are stated in terms of the acquisition of specific information a number of factors operate to reduce the validity of the test used. By isolating each testing device and the particular elements in behaviour it is supporsed to tests the reliability of the test as an adequate measure of educational results has been improved at the expense of its validity. Tyler also point out that the chief defects are that we have limited our means of observing behavior. He suggests that validity requires that tests should be made in normal situations; that they should provide a means of control over extraneous factors; and that they should represent on adequate sample of behavior.

Thus, we may raise the question: Which of the many objectives that education seeks can be measured directly by such tests? May not indirect measures be properly employed? The primary consideration at this point, however, is the extent to which achievement and similar tests really indicate the results of instruction, or, in other words, are a valid means of evaluation.

There is a tendency in the development and use of objective tests and examinations overlook the fact that evaluation is a function of the learning process. Because tests are objective there is the inclination to tract them as something separate and apart from the rest of the process. As a matter of fact, their validity may be determined largely by the extent to which they become a part of the normal experience of individual being tested. Tyler says: "... the criterion of a valid test should be the reaction of students in a variety of situations appropriate to the objectives of the subject." In other words, the test should take its place along with the other elements in the process of instruction.

A second defect in the use of tests is the variety of uses made of test results. Test results have been made to serve a number of purposes that are only remotely related to the immediate purposes for which they are devised. While many of these uses are meritorious they tend to exercise an undue influence upon numerous phases of the educational program. For example, standard achievement tests serve to show the comparative achievement of pupils in various divisions of a particular school system, as well as to compare the average achievement with national norms. This use of tests may possess value provided it does not become the sole or principal means and purpose of evaluation.

However, in some school systems the results of such tests determine to a large extent the grade placement and promotion of pupils, the promotion or retention of teachers, the salaries of teachers, and the organization of instruction. Working under such external pressures, teachers are often influenced to modify their instructional programs even when their better judgment is against such modification. Harap says: "The use of standard tests may have the effect of diverting instruction from the attainment of carefully determined objectives of a course to preparing pupils to pass standard tests."

Tests are also used as a means of motivation, of stimulating the pupil to greater application. Knudsen states that "A teacher may effectively use the results of tests to motivate the learning activity of a class," but adds "A teacher may overwork a device of the kind just described, and one who is careless of the adequacy of the tests he gives may actually discourage effort on the part of a class." Finney warns "that testing, *as a device for motivating the learner*, is more likely to be an obstacle than an aid to teaching." Frequently, tests and examinations are used for regulatory or punitive purposes, in which case the results are almost certain to be positively harmful.

This practice of using tests as a means of enforcing desired conduct not only tends to invalidate the results of the particular test, but also tends to create a resistance to tests in general, Moreover, it tends to destroy the effect of what otherwise might have been stimulating teaching.

When the aims of education are stated only in terms of specific knowledge or habits, the types of tests usually found in courses of study may be considered a reasonably satisfactory means of evaluating instruction. However, when generalized controls of conduct are expected as outcomes, other means of evaluation must be provided.

Most courses of study, either directly or by implication, recognize the importance of evaluating generalized controls of conduct. However, provision for such evaluation is rarely made. Certain courses of study organized largely from the social point of view contain suggestions for observing certain attributes of general patterns of conduct.

A recent state course of study suggests the following procedure:

> Both *attitudes and fixed associations* will have to be measured almost entirely by observational tests, that is, by observation by the teacher of the every day activities of the children.
>
> ... ...
>
> Observational tests are much more important than teachers usually realize. More can be told about the complete development of a child by observing him from day to day than in any other way. Imyortant attitudes, appreciations, and methods of work may be tested by securing from observation of a pupil answers to such questions as the following:
>
> Does he work well with a group?
> Does he get along with other children?
> Is he on time?
> Is he pleasant and cheerful?
> Does he read good books during leisure time?
> Does he get books from the public library?
> Does he raise interesting and stimulating questions?
> Is he increasingly effective in his use of references?
> Does he stick to a task until it is finished?

Does he give undivided attention to the undertaking at hand?

Does he listen courteously to others?

Is he thoughtful of smaller children?

Does he enjoy hearing good music?

An example of the application of observational tests in the various subjects is found in the course of study in arithmetic as follows:

> The teacher should also observe carefully the general methods of work and attitudes that children display in arithmetic work. The following questions may be suggestive of what to look for:
>
> 1. Self-reliance.
>
>   Does the child rely upon himself for the solution and checking of arithmetic problems? Does he willingly attack a problem and see it through?
>
> 2. Accuracy.
>
>   Does he feel responsible for the accuracy of his own results? Does he check his own reasoning for accuracy? Does he have a sense of satisfaction in the acquisition of accuracy?
>
> 3. Satisfaction with completed work.
>
>   Do inaccurate and vague results annoy him? Is he proud of completed work? Does he express himself with precision?
>
> 4. Discrimination.
>
>   Does he discriminate between relevant and irrelevant data? Does he see relative values?
>
> 5. Interest.
>
>   Is he interested in the perfection of his own technique? Does he practice of his own volition for skill? Does he

seek after knowledge of number? Does he "tinker" with numbers, make up problems and imagine mathematical problems?

6. Application.

   Does he tend to apply mathematics honestly to solution of the problems he meets in his daily life? Is he measuring, "figuring out," "stepping off"? Does he practice making figures like a surveyor, a bookkeeper, or like his father does?

7. Analysis.

   Does he break up complex situations into their component parts? Does he seek causes for certain results and situations? Does he feel relationships? Is he acquiring the habit of selecting?

8. Generalization.

   Does he see that problems group themselves into large classes? "That this one is like that one," Does he see that the same method of solution will apply to similar problems?

9. Neatness of work.

   Is he satisfied with an erased paper? Does he arrange his work in a succession of steps or is it "jumbled"? Is he careful of statement, margins, formation of figures and diagrams?

10. Love of the truth

    Does he weigh evidence on both sides? Does he cling to his result and surrender upon conviction? Does he search after the truth? Does a wrong answers irritate him and is he eager to give the correct one or search for it?

Such courses of study not only suggest procedures for observing behavior, but frequently provide illustrative inventory or check sheets. In such check sheets specific items of behavior to be observed are listed under proper headings. After each item space is provided for such evaluation as the teachers may choose to make. If a situation arises in which a pupil's behavior presents a special problem, or if it is exceptional in any respect, notation is made in a proper column. Such a record is cumulative and becomes a part of the pupil's permanent record.

SUGGESTED PROVISIONS FOR EVALUATING OUTCOMES IN A CURRICULUM PROGRAM

In planning and carrying forward a curriculum program, provision should be made for each element to function in its proper relation to the whole process of instruction. In order that the evaluation of outcomes may be effective, a curriculum program should possess certain characteristics. These are here suggested for the guidance of curriculum workers.

The Curriculum Should Provide for Continuous Evaluation

Evaluation is a continuous process. It is not merely one of a series of separate acts. However important it may be to think of learning as involving such steps as planning, purposing, executing, and judging we must keep in mind that these elements of the learning process are constantly interacting at every point. This applies both with respect to the pupil's evaluation of the results of his own activities and the teacher's evaluation of the results of instruction. And, while there may be specific emphasis upon evaluation at the culmination of a series of activities, to reserve it for that occasion alone, or even principally, would tend to defeat the purposes of instruction.

Provision must be made for Evaluating Individual Progress

The of use the results of evaluation, particularly of standardized tests, frequently tends to emphasize group rather than individual progress. Test scores, however valuable they may be. may have little meaning for evaluating the progress of a given individual except when studied in relation numerous other factors that influence his behavior. A personal continuous record of every observation that may indicate growth of the individual should be provided with suggested means for its use.

Evaluation should Stimulate Rather Than Retard

The discouraging effects of examinations or tests upon pupils are too well known to require treatment here. If evaluation functions properly as an intrinsic part of the tolal learning process, it becomes a co-operative task of pupils and teacher. The reasonableness of the means used, then, will be apparent both to teacher and pupils. When the pupil understands his own share of responsibility for the continuous evaluation of his progress, testing ceases to be a cause for discouragement and becomes rather a stimulus.

Evaluation should be in Terms of the Aims of Education

Observation of behavior should be made primarily in teems of the particular aim or aims selected for specific emphasis in a given situation. However, observations should not be limited to these aims alone. As has been stated previously, the experience of the individual pupil is extermely complex. Often other factors than those we are able to observe have the most potent influence on the one whose activities we would direct.

Tne Course of Study should Contain Suggestions for Evaluation

Specific means of evaluation may be properly included in courses of study as illustrative tests for specific knowledge and skills. Suggestions as to general procedures in evaluation may be helpful both with respect to objective and subjective means of evaluation. References to sources of information on the construction and administration of tests should be included in the references provided for teachers. The principal means of evaluation should be indicated by the materials of instruction and the suggestive activities that are provided as raw materials to aid the teacher in developing the curriculum.

Provision should be made for the Results of Evaluation to be Utilized in Continuous Revision of the Curriculum

Evaluation should be concerned with the progress of pupils in the direction indicated by the stated aims of education. Moreover, every phase of the curriculum should be under constant evaluation in the light of the major purpose which it is to serve. Therefore, provision should be made for the teacher to report consistently upon the success of the instructional program and to suggest ways of improving it. The program should be so flexible that the teacher will feel free to change a course of action at any point where the results observed indicate that a change is desirable.

13

Organizing Instruction

Consideration is given in preceding chapters to various elements that enter into the experience of children at school and condition development of the curriculum. A process moves forward and an outcome results entirely different from any of the elements involved, although the outcome is the result of their interaction. Consequently, although much light is thrown on the issues and problems involved in curriculum development by consideration of the various elements involved, there remains the difficult problem of providing for their interaction in desirable way. This task may be referred to as organizing instruction. The task in the ultimate one to which teachers must devote attention and its achievement depends upon their skill and ability. The procedure of curriculum development, however, should assist teachers to discharge the task well.

BASIS FOR ORGANIZING INSTRUCTION

Many methods have been employed to organize instruction. Most of these have come into prominence for a time, only to pass off the scene as popular fancy has turned to a new procedure. The recitation, traditional basis for organizing instruction, is probably still the major determinant in most instructional organization, although projects, type studies, problems, and units have been popularized from time to time. The variety of these methods presents a problem in the organization and development of a practical program of curriculum making. It must be decided whether a particular type of organization shall be adopted and all work be required to conform to the type, whether various types of organization shall be employed, or whether a general form of organization shall be used with limitations derived from the general concepts accepted as guides for the particular curriculum program.

The problem has been solved in various ways in different curriculum programs. In some cases, programs have been projected from the very beginning to develop any acivity curriculum, a project curriculum, a mastery unit curriculum, or a curriculum based on daily recitations. In other cases, general limitations have been defined which permit the use of various types of organization as they seem most appropriate for particular classroom situations.

All of these ways of organizing instruction have both merits and shortcomings. Certain ones seem to contribute to one phase of an instructional program and others to another. Instruction, for example, to achieve one type of outcome may partake more of the qualities of the recitation method, while to achieve another outcome the organization may have the characteristics of a project or unit of work.

Consequently, when developing a practical curriculum program, it would seem wise to look beyond any single method of organizing instruction and to seek a basis broad enough to include the advantages of various methods. It may be further emphasized that this basis of organization should be found in the guiding principles and theories accepted for a particular curriculum program.

If the controlling concepts are fundamental in nature, the type of instructional organization which results will be sound. If, on the other hand, the curriculum program has not been conceived as a comprehensive, related program, the basis for organizing instruction will be inadequate and the adoption of a particular method that is fully developed and illustrated may save confusion.

If a general basis of organizing instruction is sought from the implications of principles and procedures accepted for given programs, instructional organization will vary in different programs as principles and procedures and interpretations of their vary. The suggestions for instructional organization presented in this chapter are an outworth of the point of view presented in the preceding chapters.

COMBINATIONS OF THE AIMS OF EDUCATION FOR ORGANIZING INSTRUCTION

The concept that is held of aims of education is especially significant in implication for organizing instruction. One concept will suggest one type of instructional organizotion and another concept an entirely different type. The consistency of a program of curriculum development depends to a considerable extent on the adequacy of the interpretation of the implications for instructional organization of the concept of aims held in the program.

The concept of aims of education as generalized controls of conduct, involves two points that are suggestive for organizing instruction ; namely, generalized controls of conduct are integrations of specific habits and knowledge, and the degree of generalization depends principally upon the number of specific habits and the extent of knowledge involved. These points suggest two requirements for the organization of instruction.

Firstly, opportunity must be provided for the child to develop the desired integrations of habits and knowledge. This seems a perfectly obvious conclusion. Yet it is a requirement for instructional organization frequently overlooked. Integrations of habits and knowledge which represent desired types of conduct can be developed only by guiding the child in situations which require such conduct. In other words, there is only one way to learn to be honest, and that is to be honest; or to learn to be scientific-minded, and that is to be scientific-minded. The role of the teacher starts in securing one act that exemplifies the desired type of conduct. Harving secured one such act the chances are slightly better than before that situations requiring the same type of conduct will be met as desired. As other situations arise, and the pupil is guided in these so that he responds with the desired conduct, more and more habits and knowledge become a part of the control of conduct and the chances increase that in all new situations he will exhibit the desired trait. Thus, it is required in organizing instruction that many situations be provided in which the pupil can exhibit the desired types of conduct.

Not only should many opportunities be provided to exhibit the desired type of behavior, but also the learner should experience a wide variety of such situations. Similar situations require similar integrations of habits and knowledge to deal with them successfully. Meeting essentially the same situation again and again contributes comparatively little to the development of generalized controls of conduct. But if varied situations are encountered, new relationships are established and habits and knowledge not previously mastered are required. This aids be process of generalizing and adds assurance that the desired pattern of conduct will function in new situations.

The possibility that controls of conduct will be successfully generalized is further enhanced if the situations in which guidance is provided have lifelike qualities.

In other words, behavior of the type exhibited will most certainly be exhibited in situations out of school, if school experiences have characteristics similar to out-of-school experiences. This is true because we can deal with new situations only in terms of past experience. Given a new type of machine to operate, for example, we may select something from an experience with a Model T Ford, a motor boat, a tractor, and experiment in chemistry, from which to construct a satisfactory mode of operative. We make such selections because elements in the new-machine situation suggest the appropriateness of certain habits or knowledge employed in other situations. Obviously, the more similar in character these situations are, the greater the chance is that we will develop a satisfactory made of behavior.

The school has too frequently provided a instruction organization with such artificial characteristics as to limit to a last measure the possibility of developing generalized controls of conduct. School situations have been over-simplified. The intricacy of relationships characteristic of life situations outside of school has been eliminated. The result is that when the pupil meets complex life situations he fails to carry over the mode of behavior the school endeavored to develop.

Consequently, it is of utmost importance that there be included in the school life of the child complex situations which require that the appropriateness of a particular mode, of behavior be deduced from a continuous flow of varied events.

Instructional organization, then, should have a primary point of emphasis the provision of a large number of varied situations with lifelike qualities in which the child is guided in behavior of the desired type.

Such instructional organization provides opportunities for establishing relationships for achieving rich associative learning and thus for developing generalized controls of conduct. The desired attitudes have opportunity to function under a variety of conditions and with a variety of relationships. They have opportunity to function under circumstances similar to those encountered out of school and to influence ends of vital concern to the pupil, thus paving the way for even more effective exemplification of the attitudes in succeeding undertakings.

A second point of emphasis is suggested by the fact that ability to use effectively appropriate habits and knowledge makes it possible for an individual to employ a particular generalized control of conduct. Lack of facility in their use reduces the possibility that the individual will employ in a satisfactory manner the desired generalized control of conduct. The use of habits and knowledge may be facilitated bath by a high degree of mastery and by organization in terms of inherent relationships. Activities to achieve mastery of habits and knowledge are frequently referred to as the drill phase of instruction. Effective organization of habits and knowledge implies establishing the relationships which indicate subject fields. The two are directly related and both frequently require direct, concentrated effort and guidance, as well as continuous checking.

If either of these points of emphasis is overlooked in organizing the instructional program, the child receives a one-sided education. Lacking the basic experiences, the child does not formulate out of his habits and knowledge generalized controls of conduct. They remain unrelated, relatively meaningless bits. Lacking, on the other hand, effective control of habits and knowledge, there is nothing from which to build generalized controls of conduct and consequently little increase in ability to meet new situations in desirable ways.

IMPLICATIONS OF THE NATURE OF LEARNING FOR ORGANIZING INSTRUCTION

The concept held of the nature of learning also has significant implications for organizing instruction. The central point of reference in organizing instruction from the standpoint of the learner may be either the knowledge and specific habits it is considered desirable to master or the purpose of the learner. In other words, either potential subject matter or the experience of the learner may be the point about which instruction is organized.

If subject matter is made the central point of reference, the purpose of the learner must be forced to correspond to predetermined content. If the experience of the learner is made the central point of reference, subject matter is selected to help achieve ends about which the learner is concerned and which he believes are worth while. The importance of making the purposes and needs of the learner the primary point of orientation in selecting activities and subject matter has been emphasized in foregoing characters.

Consequently, in so far as the point of view presented in this book is concerned, we turn to consideration of types of purposes for implications as to organizing instruction.

Purposes fall into the general types which are suggestive for organizing instruction. Theee types are suggested by essential differences in stimuli which give rise to purposes. Stimuli very greatly in intensity and persistency. Some may be easily eliminated and equilibrium quickly established. Others persist for long periods of time and require a complex series of activities to eliminate them. Hollingworth describes the differences as follows :

> Transient stimuli lead on the whole to brief responses, and these, as we have seen, are often nicely calculated to eliminate the stimulus. Persistent stimuli, or motives, in the narrow sense, must lead to long continued activity.
>
> The motive, in other words, brings into play a certain general set of responses, of a certain general sort and in a certain general direction ; responses which on the whole may in the past have succeeded in the effective relief from such an irritant. All that the motive can account for is the occurrence of the activity and its general character and persistence. Just what acts come, from moment to moment, is likely to be due to the contributing effect of *other stimuli*, occurring from moment to moment.
>
> A hunting dog, intent upon the pursuit of another animal, will serve as a simple example. So long as the prey is in sight, or in sound, or in smell, but out of reach it constitutes a persisting stimulus. It sets up, in the animal hunting it, varied activities and changes, of a

general character. We recognize the dog to be excited, rather sleepy ; he is animated, rather than at ease ; it is the fore part of his body, his eyes and jaws and ears that are especially animated, not his tail ; moreover his movements of locomotion are all in a given *direction*, he is after the prey. So the persistent irritant, the fleeing prey, sets up a general set or repertoire of activity which we call the attitude of attack.

But *precisely* what the dog will do from moment to moment will be determined by *transitory* stimuli encountered on the way. Coming to a fence, he crawls through it ; reaching a ditch or a wall, he springs over it ; grabbed at by a passerby, he snaps at the extended hand ; joined by another dog, he pelps, and so on. It is true that such a dog is likely to show limited scope for the present situation. If he injures his foot, he "pays no attention" ; if his master whistles, he seems oblivious to this stimulus. He may, in fact, seriously injure himself because of the lack of sagacity which characterizes him in this moment of excitement.

This distinction suggests two general types of situations in which the teacher must direct learning. The first arises from the action of persisting stimuli. The purposes evolved from such stimuli project well into the future. They require careful initial planning, continuous readjustment of plans to secure progress toward the desired outcome, working for deferred values, persistence ; and they involve a great complexity of activities. Such purposes may be described by the term dominating.

The second general type of situation arises from the action of transient stimuli. There are two general sources of such stimuli. The first source develops from efforts to realize a dominating purpose of the kind described above. Such efforts often make necessary the use of specific habits and knowledge of which the child does not have adequate mastery.

When such a condition develops, activity may for a time appropriately be directed toward the mastery of the requisite abilities. Then it is that the teacher may safely direct attention almost exclusively to a specific ability. But having gained the necessary mastery, efforts are again made directly toward realization of the dominating purpose.

The second source is from the general course of life activities. Much of life is on a habit level and consists of habitual adjustments to simple stimuli. Eating, dressing, protecting ourselves from accidents, driving a car, are illustrations. Upon occasion situations involving more than usual difficulty arise and special attention must be given temporarily to development of specific habits that serve as satisfactory means of adjustment. The school program should assist in developing this habituated basis for carrying forward the regular course of life activity. To achieve this end the teacher finds it necessary from time to time to give direct attention to specific habits that the child has not mastered sufficiently well to carry on routine life activities effectively.

Thus, the action of transient stimuli frequently leads to situations in which attention must be given directly to the mastery of specific habits and knowledge. It should be noted especially, however that these stimuli arise out of larger, more commanding situations and have meaning only as they are related to these situations.

This analysis suggests, as did consideration of the implications of aims, two types of instructional situations that should be provided from dominating purposes of children ; and, second, situations developed from the need for organization and mastery for effective use of specific habits or knowledge as a means of realizing dominating purposes and of carrying on routine life activities. It will be noted that the points of emphasis in the two analyses suggest types of learning situations with essentially the same qualities. The requirement from consideration of aims that provision be made for a large number of varied situations with lifelike qualities coincides with the organization of instruction around dominating purposes of children. The need for mastery of specific habits and knowledge suggested by study of aims coincides with the type of instruction required by operation of transient stimuli.

Consequently, so far as the implications of the general point of view of curriculum making presented in this book are concerned, there appear to be required two points of emphasis in organizing instruction. For convenience we shall refer to the first of these as the major experiential phase of the instructional program, and to the second as the direct teaching phase of the instructional program.

THE MAJOR EXPERIENTIAL PHASE OF THE INSTRUCTIONAL PROGRAM

Development of an adequate instructional organization requires careful observance of the characteristics of the two phases of the instructional program just discussed. Instructional organization that provides the major experiential phase of the program should have three characteristics. These characteristics may be deduced from preceding discussions.

The children have a dominating purpose which they consider worth while and which is compatible with the aims of education. This is the first and most indispensable characteristic of instruction designed to broaden and enrich the experiences of children. It is the dominating purpose which ties the various activities together and gives them meaning for the child. The preceding discussion in this chapter presents the basis upon which the modifier *dominating* is added. The purpose must be considered, worth while by the pupils or the drive for continued persistent action is lacking. It must be compatible with the aims of education or the resulting activity will not be educationlly worth while. The imortance of this characteristic can hardly be over-emphasized. In organizing instruction it should receive first consideration.

The children, under the guidance of the teacher engage in a series of activities, which they consider a means of realizing their purpose. A dominating purpose requires may activities for realization. If these activities are carried forward by the children with the recognition of the relationship of each to the outcome they hope to realize, real unity will be achieved. Lacking such understanding, the integrating, force of experience is eliminated and the activities tend to become mere movements.

The careful guidance of the teacher is considered, essential because activities of varying worth, as measured by the desired outcomes of education, are always suggested by children. The teacher must estimate the value of each activity that is proposed and either encourage or discourage its use. Also, there is nothing in the mere performance of an activity to guarantee achievement of desirable outcomes. In other words, the same activity may be performed in such a manner as to result in significant educational outcomes or to be of negative value. The teacher must be on the alert continually to see that pupils perform the various activities in which they engage so as to releaze educationally desirable outcomes.

The careful guidance of the teacher is also required because pupils frequently need help in performing necessary activities. Failure to recognize the need for assistance and to provide it tends to encourage slipshod methods of work and low standards of achievement.

The children evaluate the outcomes of the activities in which they engage. There is required a relatively continuous evaluation of outcomes of activities is they are carried forward. Maximum value will be derived from experience only if there is also a more comprehensive review and evaluation of a total series of activities after a purpose has been realized. Such a summarizing evaluation develops attitudes that facilitate the achievement of purposes involving similar elements.

OTHER CONSIDERATIONS

Many rather specific requirements are set up for certain methods of instructional organization which provide broadening experiences for children. For example, in organizing certain types of units of work the length of time required for completion of the unit is emphasized. In some cases, units are uniformly planned for eighteen or thirty-six weeks. Frequently, instructional organization involving markedly shorter periods is looked upon askance.

Length alone is not a determining characteristic of instructional organization designed to provide children with broad, meaningful, experience. Such experience, is true, evolves from a purpose which requires a relatively complex series of activities for realization, but this series of activities may consume widely varying amounts of time. In one case two or three weeks may suffice to achieve the purpose, while in other cases eighteen or twenty weeks may be required. Realization of purpose should be the sole determinant of length.

Length of an instructional unit is definitely conditioned by the maturity of the learner. As maturity approaches purposes tool to involve more and more deferred values. Hence, it is reasonable to expect that due consideration for the experience of children would lead to comparatively short instructional units with young children and to longer ones with older children. Strangely enough exactly the opposite practice is commonly followed. The first grade child has units that cover an entire semester or year and the junior high school pupil has units to six weeks in length.

Another point that merits attention is the relationship which must exist between instruction organized as described heretofore and subject fields. In developing such instructional organization no effect is made to restrict activities and content to one subject field or to include material from all subject fields. Freedom must be provided to go any source from which help may be secured in realizing the pupils' purpose. Teachers, of course, guide development so that the must worth-while subject matter is used. But subject matter is selected because it helps the child solve a problem rather than because it happens to be in a textbook or in a particular subject field.

Often purposes will be developed that require materials almost wholly from one subject field, and again, materials from many fields may be needed. As adulthood approaches it is entirely possible that purposes may be formed which require thorough-going study and mastery of certain relatively narrow, logically organized fields of subject matter.

If such a purpose develops, it should receive as careful attention as purposes which involve matterials from several fields. The development of a sound instructional unit is just as possible as in the lower grades were a purpose requires materials from many fields without regard for the logical arrangement of the subject matter. In brief, the learner's purpose is the *unifying* force in all cases. As such it may require materials from a single logically organized field or it may make necessary disregard of all conventional arrangements of subject fields.

A basis for evaluating the extent to which a given instructional unit possesses foregoing characteristics is provided by criteria and set forth in preceding chapters. A check list of the type given in Chart VI assists in evaluation.

THE DIRECT TEACHING PHASE OF THE INSTRUCTIONAL PROGRAM

The point of emphasis in the intructional program which we have referred to as the direct teaching phase involves, as pointed out before, a twofold task. Essential knonwledge and specific habits must be mastered and organized for most effective use in new situations. This phase of instruction has been subjected to much careful study, Extended analyses have been made to determine what facts, generalizations, and principles are used frequently. Numerous exprimental studies have been made to discover the most efficient methods of mastery. From these analyses and experiments many valuable data are available. These data should be employed in curriculum making to provide for a wise selection of abilities to be given attention in the direct teaching program and for selecting the most effective means for their mastery.

Even with the large amount of scientific evidence available for developing this phase of instruction, much time is wasted and a great deal of ineffective instruction given. This results perhaps more from an unwise selection of abilities to be given direct emphasis separate from the major experiential phase of

CHART VI

Check List To Assist In Evaluating Instructional Units

Questions for Guidance	*Comment*
1. Do the pupils have a dominating purpose ?	1.
(*a*) Is the type of behavior required compatible with the aims of education ?	(*a*)
(*b*) Is the plan of action to realize the purpose based on the past experience of the pupils ?	(*b*)
(*c*) Do the pupils believe the purpose is worth while ?	(*c*)
(*d*) Did the purpose arise from stimuli of a kind the pupils will meet in out-of-school experiences ?	(*d*)
(*e*) Have the pupils mastery of the abilities needed to carry out the plan successfully or can they master them in reasonable time ?	(*e*)
(*f*) Does the purpose require behavior on a higher level than the pupils have exhibited before ?	(*f*)
2. Have the pupils engaged in a series of activities planned by them and the teacher to realize their purpose ?	2.

(*a*) Do the children recognize the part the various activities in which they engage are to play in realization of the purpose ?	(*a*)
(*b*) Do the various activities contribute to realization of of the aims of education ?	(*b*)
(*c*) As the activitites suited to the mental, physical, and emotional characteristics of the individuals who engage in them ?	(*c*)
3. Have the children evaluated their activities in terms of the purpose they set out to achieve?	3.
(*a*) Has the plan of action been continuously revised and improved as steps have been taken in its development ?	(*a*)
(*b*) Have the children recognized the need for more adequate mastery of certain abilities and have steps been taken to achieve such mastery ?	(*b*)
(*c*) Have the children considered the enterprise as a whole when complete to see what improvements could have been made ?	(*c*)
(*d*) Have the children canvassed other related enterprises in which they would like to engage ?	(*d*)
(*e*) Did the enterprise develop conduct of the desired type?	(*e*)

instruction than from any other cause. At least it is of utmost importance that very careful selection be made. The following criteria appear to the writers to provide a sound basis for choice of abilities to receive direct emphasis.

The child uses or can use the ability now in meaningful school or out-of-school experiences. Very frequently abilities are given direct, intensive cultivation when the child has no meaningful situations in which he can use the abilities. This leads to learning by memory and contributes nothing to the child's understanding. This tendency has been furthered by studies of grade placement which emphasize placement of content in the lowest grade at which a child can remember a fact or perform a skill rather than at the stage of development at which optimum mastery and understanding can be achieved. The tendency is also furthered by tests that emphasize ability to reproduce facts or to perform specific habits in isolation rather than use of the ability in situations when it is needed.

The importance of this criterion has been recognized to a considerable extent in developing curriculum materials for primary grade children. For example, Brueckner, after considering the findings of studies wnich show that children in the primary grades acquire through informal activities much larger arithmetical backgrounds than is ordinarily believed possible, concludes: "The curriculum maker in the primary grades should recognize this important fact, reduce the emphasis on formal arithmetic in these grades, and provide rich units of instruction in which number may function in meaningful ways."

There has been hesitance however, to give merited consideration to the same point in intermediate and high school grades. Nevertheless, the principle of learning involved operates regardless of grades, and the criterion as applicable to one level of learning as to another. Its more careful observance would inject some of the vitality characteristic of good primary grade work into other levels of work.

The ability can be mastered economically by the child at his persent level of development.

There is reason to believe that certain stages of the growth process are particularly adapted to development of certain types of abilities. The infant, for example goes through a period of motor adjustments. Major development centers around gaining mastery of large movements. Later, he reaches a stage of growth when language ability begins to develop in a marked way. No doubt, throughout the period of immaturity there are similar stages of growth conducive to optimum development of certain types of abilities. It is an important task in teaching to provide for the mastery of various types of abilities at the stage of growth best suited to their mastery. Failure in this regard makes teaching a difficult, trying, and often, to all appearances, hopeless task.

Yet, it is a very general tendency to fail to observe this criterion. Two children may enter a first grade together. One may have started talking a eighteen months, the other at thirty months, yet they are presumed to be equally ready to begin development of another language ability, reading. If the second child is inept in developing the ability he is apt to be called a failure by the school while a year of broadening experiences and maturation might place him where he could as easily gain command of the reading ability as he did of the speaking ability. This same principle applies with particular force to study of specialized fields in the secondary school. There are, no doubt, numerous "school failures" in high school how are really children who simply have not reached the stage of maturation required to develop effectively and economically the type of ability required.

When one considers numerous abilities now taught in various grades, the questions arise: Why spend hours of drudgery developing this ability now when a little later it may be developed more effectively in a half or a third of the time? Why drill and drill when a broadened background of basic experience which gives the ability meaning will make possible its mastery with little drill?

The problem then is to find the general stage of growth at which particular types of abilities are mastered most economically and to guide individual children in mastery of these abilities as they enter the respective growth stages. This means that the development of specific abilities cannot be assigned to arbitrary time divisions such as grades, but rather that general periods of emphasis must be indicated. It means also that the youngest age at which a child can achieve a particular ability is not necessarily the optimum age for such development. Both of these assumptions are frequently made in curriculum work.

The ability cannot be mastered adequately without special emphasis not possible in ordinary use. This criterion guards against developing a program of instruction which requires drill for the mastery of abilities whether the child needs the drill or not. Much time is wested in schools by children studying and spelling words they already know, working problems they already can work, developing skill in writing significantly above a point that it can be maintained in ordinary use, and in similar ways. This emphasizes the point that abilities to receive direct emphasis should be those of which the child evidently lacks sufficient mastery for effective use.

THE DIRECT TEACHING PROGRAM AND SUBJECT FIELDS

There is a close relationship between the direct teaching phase of instruction and subject fields. Principles, generalizations, facts, and specific habits are organized in subject fields to establish the relationships between them. These relationships add meaning and increase materially the possibility of effective use of various abilities. Consequently, subject fields may appropriately play a part in this phase of instructional program. The child should be made conscious of the relationships suggested by subject fields and should be guided in understanding and appreciating these relationships. He should, in brief, be brought to see that subject organization is a useful tool which the race has developed and which he can use to advantage in attacking his problems. The teacher should recognize at all times, however, that the extent to which given children can use this tool varies greater and that in this regard constant adjustment is needed to the capacity, needs, and maturity of the learner.

INSTRUCTIONAL PROGRAM SHOULD NOT BE DIVIDED INTO DISCRETES PARTS

It will be noted that throughout the foregoing discussion, the phrase, "points of emphasis for instructional organization," has been used. This phrase was selected because it suggests that the instructional program should be considered a unit. One of the major faults of curriculum programs in organizing instruction is the tendency to set up various parts of the instructional program without relationship to other parts. First, subject divisions are usually made in such a way that there are no fundamental relationships between work in the various fields. Then divisions are made within the subjects which further make for separateness. For example, English is separated from the other content fields; then literature and composition are divided; then within each of these divisions more minute divisions are made. All of this contributes difficulties in establishing relationships and in developing a fundamental educational program.

Ideally, the instructional program should move along much as life out of school moves. General time and place guides, such as a time for getting up, going to work, and for meals, should be employed, but within these guides the demands of the particular situation should determine the kind of activity engaged in and the time devoted to it. To realize this ideal will require a more flexible program of work than has generally been employed in both elementary and secondary schools.

THE TEACHEK'S PROGRAM OF WORK

The traditional program of work in the elementary school consists of uniformly short periods, followed with absolute regularity. Such a program cannot be employed to develop the type of instructional organization suggested by the foregoing discussion. In the secondary school the program is characterized by strict adherence to subject matter lines, the exclusive use of the recitation method, and general lack of concern on the part of teachers of different subjects for the work in other subject.

These conditions stand in the way of effective instructional organization in the secondary school. In the place of these rigid programs of work must be substituted flexible programs that serve as general guides within which instructional organization may be adjusted as need arises. The amount of flexibility that should be permitted in a program of work depends on several factors, the most important of which is the ability of the teacher to plan his work in light of the demands of a developing situation. Even though a given teacher may be very much limited in this ability, a curriculum program should nevertheless so present materials as to encourage growth in that direction.

A program of work in an elementary school, in order to provide for an instructional organization of the kind described here, should have two general divisions. One division should provide for the major experiential phase of the instructional program and the other for mastery and organization of specific habits and knowledge for effective use. It will be necessary, of course, to provide as well for the routin life of the school, which is concerned which carrying on those activities which the school requires for effective normal operation as a place for boys and girls to live. These activities are varied in nature. They include such items as health inspections, management of school traffic, care of school equipment and materials, and provision for free reading and play.

The clarity with which the program of work is divided into definite time periods and the detail with which the large divisions are subdivided depends on the individual teacher. The less skillful teacher will find it necessary to make rather definite period allotments, but as skill increases the school day takes on greater and greater unity. One phase of work leads naturally into another and sharp breaks are eliminated. Also, as skill is increased, less time is required for direct attention to specific habits and knowledge to insure adequate mastery. Consequently, a program of work should be made for a given teacher and a given group of pupils. The basic requirement should not be uniformity, but rather that the teacher know what he is doing and have a program sufficiently definite to assure that he does know.

In the secondary school, teachers of different subjects must give greater attention to work in various fields. They must develop a co-operative method of planning. They must be freed also from the administrative requirement of hearing pupils recite during all periods of teacher direction. The recitation period must come to be considered a time when the teacher is free to assist pupils to carry forward their work. This will require a complete revision of the attitude and method of the usual secondary school classroom.

COURSE OF STUDY MATERIALS AND INSTRUCTIONAL ORGANIZATION

Course of study materials should be prepared and organized to facilitate the desired type of instructional organization. If, for example a flexible type of instructional organization such as is described in this chapter is desired materials must not be presented in an organization that does not permit adjustment. Courses of study which prescribe units to be taught, or organise materials into recitation periods, or prescribe textbook pages, make impossible the development of a flexible program. Some courses of study present materials in a form different from any of these and which is especially conducive to flexibility of instructional organization. Materials are presented in such form that the teacher is permitted freedom in selecting activities and content for use in instructional units. It is recognized as well that mastery of the various abilities requires a span of grades rather than one grade only. Only two limitations are imposed in such courses, the aims of education and the scope of the work of the grade. Both are sufficiently broad to permit adjustments to individual pupil needs, abilities, and interests; and to environmental conditions.

PLANNING FOR INSTRUCTIONAL ORGANIZATION

Adequate instructional organization depends most of all on careful planning by the teacher. Even though materials may be made available which suggest desirable lines of development, and which are sufficiently flexible to permit organization to meet the needs of particular situations, the instructional organization will be poor if the teacher does not plan his work with care.

Planning procedures themselves should be flexible. There is no single best way to plan, nor any single best form for plans. It is a mistake to restrict teachers to uniform planning procedures. The traditional type of plan book, for example, encourages piecemeal, inadequate planning.

Planning should involve three general stages, a pre-plan, a readjustment of plans as work progresses, and an evaluation of the work after its completion to note points that need improvement and leads for futher work. In each of these stages attention should be given to all elements in the learning process. It will be noted by the dimensions given on the form that it partakes more of the qualities of a work sheet than of the traditional type of plan sheet. A work sheet of this type has a number of advantages. It is large enough to provide space for recording most of the important items involved in planning and developing a unit. At the same time, it makes provision for organizing and relating these items as they are recorded. It makes provision as well for noting the abilities in the various subjects that require direct instruction.

When more than one sheet is required in developing a given unit, which is frequently the case, these advantages are lessened. Even so, such a sheet is much more usable than ordinary plan books or notebooks. The sheets may be arranged conveniently in a portfolio and folded. This makes them less cumbersome and tends to facilitate their use. When so used, half of the back of the sheet may be used to keep a diary of the unit as it develops.

The success of a curriculum program depends ultimately upon the ability of teachers to use in their planning the materials developed in the type of instructional organization suggested. If materials and the suggested plan of organization become a part of the teachers' plans and become a means of enriching pupil experience, the curriculum actually is improved. Consequently, the development of materials and suggestions for organizing instruction, whatever they may by, should be projected with constant reference to the way teachers can employ the suggestions in planning their day-by-day instruction.

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